SOME FACTORS AFFECTING THE LOCATION OF THE MEAT-PACKING INDUSTRY IN KANSAS

by

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INTRODUCTION

To most citizens of Kansas the meat-packing industry in the state represents a large and prospering enterprise. The layman sees the vast plants, the hum of activity, the thousands of livestock entering the gates, the millions of pounds of dressed meats coming from the coolers, and assumes that all is functioning with smoothness and efficiency.

But to the individual who makes a closer examination, the situation is not so simple. Continuous change is taking place and the problem of keeping up with this change often is difficult. Problems face the industry--some incidental and some pertinent and disturbing. During the past few years, Kansas packers faced one of the most difficult periods for the industry.

Perhaps typical of that opinion is a statement made by one of the Kansas City packers in describing his situation:[1]

> Our volume of cattle receipts has been cut more than half during the past decade. The prices we pay for hogs are nearly on a level with those in Chicago. Today's spread (June 21, 1940) was five cents. To be on a fair competitive basis, we need a normal spread of about 30 cents. In the South, which has been our natural outlet, we cannot depend upon our former volume because many small plants have grown up there in the last few years and they supply a large part of that local market. The foreign market that we formerly had has nearly disappeared. In addition to this, a number of small plants have arisen in the past few years here in the state of Kansas and provide local competition both for buying livestock and for selling meat. It is a difficult situation and what to do is a serious problem.

Scope

As a part of the program of industrial research developed under grants from the State Legislature of Kansas, a research project to study the economics

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[1] Confidential conference with a Kansas City meat-packing executive, June 21, 1940.

of the meat-packing industry in Kansas was established at Kansas State College in 1939. A large number of economic factors affect an industry such as the meat-packing industry. One phase of the economics of the meat-packing industry is that of location. This study is concerned with some of the factors affecting the location of the industry. Included in the scope of the study are: (1) a brief history of the meat-packing industry in Kansas; (2) the importance of the industry and trends in the industry in the United States, in regions within the United States, and in Kansas; (3) an analysis of transportation costs and freight rate structure as they affect the meat-packing industry in Kansas.

Limitations of the Study

This study has two principal limitations. These are: (1) the subject is too broad for adequate treatment in this study; (2) original data from the records of meat-packing plants operating in Kansas, which would have been quite useful, could not be obtained and it was therefore necessary to use data from secondary sources. This has made it necessary to assume hypothetical cases in much of the analysis of the relationship of transportation costs to packing plant location.

Purposes

The purposes of this study are: (1) to trace the history of the meat-packing industry in Kansas; (2) to point out the importance and trends of the industry in the United States, in regions within the United States, and in Kansas; (3) to show the relationship of livestock and meat transportation costs to the location of meat-packing facilities.

METHOD OF PROCEDURE

In tracing the history of the meat-packing industry in Kansas, the available literature was read and summarized. The discussion of factors affecting the location of meat-packing facilities was also obtained from available literature. The material presented on the importance of the industry and trends in the industry is an analysis based on published data. The publications of federal and state agencies were relied upon for most of these data. Published tariff rates of transportation agencies were used in the study of transportation costs. In this part of the study it was necessary to set up hypothetical cases to compare costs of shipping livestock and dressed meats and in comparing costs of shipping to different destinations and from different points of origin.

REVIEW OF LITERATURE

Early History of the Meat-packing Industry in Kansas

It was neither by a native Kansan nor within the state of Kansas that were sown the first seeds of development of the meat-packing industry in the state. It was the idea of a young Illinoisan, combined with the oversupplied cattle condition of Texas following the Civil War, that really started the chain of events. This young man saw the possibilities involved in getting these Texas cattle east via a railroad point in Kansas. He, Joseph G. McCoy, told in his autobiography how he succeeded in getting railroad facilities and in establishing a market at Abilene, Kansas in 1867. Thousands of cattle moved north across Indian territory up the Chisholm Trail into Kansas, and the stage was set for meat-packing. This development brought about by McCoy

started extensive activity in the packing enterprise. In 1867 Edward N. Pattison started a business in Junction City. He packed about 1,000 head of cattle and moved his enterprise to Kansas City the next year./2

This movement to Kansas City has a particular significance. The development of meat-packing in the Middle West was a natural consequence of circumstances. Chicago was the nearest packing center, and need of packing facilities closer to the source of supply for this heavy stream of Texas cattle was obvious. Kansas City, at the junction of the eastbound railroad and the Missouri River, was the logical point, and because of this favorable location, soon became a thriving packing city and the meat-packing center of the Middle West.

Pattison entered into partnership with J. N. L. Slavens, and in 1868 built the first packing house in Kansas City. The first year they slaughtered slightly more than 4,000 cattle--the first cattle packing done in Kansas City.

During the second year of operations for this firm, 1869, F. B. Nofsinger bought out Slavens' interest in the partnership. This new organization controlled the plant until 1880, when Jacob Dold & Sons from Buffalo, New York, purchased the plant and started operations. Slavens, after selling his interest to Nofsinger, formed a new partnership known as Ferguson, Slavens and Company. In 1869 they built another plant. Slavens & Oburn succeeded Ferguson, Slavens and Company, and in 1884 sold out to the Morrison Packing Company of Cincinnati, Ohio. The Morrison people engaged solely in hog packing and had an outlet for their product in the South and Southwest.

An expanding eastern firm, Plankington & Armour, started business in Kansas City in 1870. They rented the plant of Pattison & Nofsinger and the following year, 1871, built their own house. It was this same year, according to McCoy, that the Kansas City Stockyards was formed.

After Plankington and Armour built their plant, it was not until the next

decade that further expansion of packing activity occurred. Fowler Brothers of Liverpool, New York, and Chicago, built a modern plant at Kansas City and started slaughtering in 1881. In 1884 the Kansas City Packing Company was formed; in 1885, the Alcutt Packing Company; and in 1886 Swift & Company established a plant at Kansas City. In 1886 the Kingan Packing Company of Belfast, Ireland, and Indianapolis, Indiana, started operations. They carried on extensive operations in hog packing, but their plant later burned and the location was bought by Cudahy in 1900.

In the middle 80's another interesting development arose. The Western Dressed Beef Company was organized and a plant was built in Kansas City. This was a part of an extensive scheme of integration. A certain Marquis De Mores conceived an idea for establishing a completely integrated unit of meat production. His corporation produced its own cattle on its own ranches, did its own slaughtering in its own plant, and marketed its own beef in its own wholesale houses in New York, Baltimore, Boston, London, and Paris. The plan failed, however, and in 1889 the Kansas City Packing Company took over the plant. In 1892 Swarzchild and Sulzberger of New York, later known as Sulsberger & Sons, bought the plant and operated it until about 1916, when Wilson & Company came to Kansas City and purchased it from them.

Additional plants arising in Kansas City shortly after the turn of the century were Morris and Company in 1903, John Morrell & Company in 1903, and the American Dressed Beef & Provision Company in 1904. Other plants undoubtedly were in operation, but apparently they were not of sufficient importance to warrant comment from those early writers reviewing the beginning of the industry.

Kansas City did not have a monopoly on packing operations in Kansas. According to the Topeka Daily Capital there were developments elsewhere as

early as 1878. It was during this year that Fowler's built a large pork-packing plant in Atchison. This flourished for a number of years. In 1886 the Wolff Packing Company was incorporated and started packing in Topeka. This plant changed hands three times and is now known as the John Morrell Packing Company. In 1919 the Kaw Packing Company plant was built in Topeka. The history of Reno County told of the promotional development and building of the Hutchinson Packing Company in 1889 at Hutchinson, Kansas. The 1931-32 release of the Kansas Historical Quarterly pointed out that in Pittsburg, the Hull & Dillon Company, which still is in operation, was organized in 1885./4 The Topeka Daily Capital also mentioned the beginning of meat-packing in Wichita in 1888 when Jacob Dold established his plant there and in 1899 when Cudahy and Company started construction of a plant.

Other than this, little information is available on the history of the packing industry in Kansas. In 1919, the United States Department of Commerce began to break down specific data by states in its Biennial Census of Manufacturers/11, giving such definite information. The recent trend of packing operations is discussed later.

Factors Affecting the Location of the Industry

That the location of the meat-packing industry of Iowa was influenced by transportation facilities has been pointed out by McCarty and Thompson who stated:

> Nearby markets were essential and the logical hog markets were the new communities along the Mississippi River. Iowa had no railroads until the 1850's and they were not a dependable transportation medium until the following decade. In the meantime, the Mississippi River towns were the only Iowa points having transportation adequate to care for bulky exports such as meat and grain...Under these circumstances it is not surprising that nearly ever Mississippi River

> village came to boast of a 'pork-house' as a prominent institution among its local industries even in the very early days of its existence./8

McCarty and Thompson showed that packing plants in the interior of Iowa immediately began to spring up with the coming of the railroad. "Assured of an abundance of livestock, and of transportation facilities for obtaining animals and marketing meats, interior Iowa packers quickly realized their advantageous situation."

In discussing the decline in importance of the river markets they stated:

> Of even greater importance was the freight rate situation over which adequate powers had not yet been accorded the Interstate Commerce Commission. Personal discrimination (direct rebates to individual shippers) was disappearing but place discrimination (a preference of certain communities as against others) was still rampant. Important packers with plants in Chicago and on the eastern seaboard were anxious to secure low freight rates on hogs from Iowa to their plants, as well as on meats from Chicago to the Atlantic coast. Sensing discrimination, eastern Iowa packers initiated many a bitterly contested case before the Interstate Commerce Commission, and finally succeeded in obtaining somewhat more favorable rates. In the meantime, however, many of the smaller Iowa packing concerns failed.

In discussing methods of shipment of livestock it is shown that the cost of hauling by truck is probably higher than hauling by rail but that truck transportation is more convenient and offers more complete service than railroads in picking up livestock on farms. Farmers are more willing to use truck transportation than rail transportation even though it may cost more in order to get the added service and convenience.

Dowell and Bjorka held that the rapid development of Chicago as a packing center was due to its favorable location in regard to transportation facilities. With the development of refrigerator cars it was possible to dress meat in the West and ship the dressed product to the East coast. There was much opposition to the tendency of meat-packing plants to develop nearer the sources of livestock production. This opposition was largely from those who had packing plants

nearer the consuming centers on the East coast. They said:

> The dressed-beef trade continued to increase in spite of the opposition to it. Nevertheless many controversies developed as a result of this practice. Important among these were freight rates on meat in relation to the freight rates on live animals./1

In regard to recent trends in the location of slaughtering facilities, Dowell and Bjorka indicated that the recent trend has been to locate nearer the source of livestock supplies rather than near the point of consumption.

> The increase in livestock slaughter near the source of supply is significant from the viewpoint of both livestock marketing and meat distribution. The increased shipment of carcasses, cuts, and prepared products has replaced, to a considerable extent, the shipment of live animals from areas of surplus production to areas of deficient production...In the northwestern corn belt, where the increase in slaughter has been relatively greatest, the freight-rate structure favors the shipping of meat products in comparison with the shipping of live animals...The slaughterers in that area are so situated that they can obtain supplies from farmers who are located relatively near by and this tends to keep down transportation costs and shrinkage in transit.

In forecasting possible future trends, Dowell and Bjorka stated that:

> Slaughtering of livestock near the place where the animals are produced has certain advantages that are likely to continue to be emphasized in the future. This applies particularly to the ease with which animals can be moved to the slaughtering plant and the shorter time required to get the animals to market. Not only is it more convenient but also it tends to keep to a minimum shrinkage and loss due to death and crippling of animals...Transportation rates have an important bearing on the place where some livestock is slaughtered. The freight-rate structure is at present such that meat and meat products can be transported from the upper Mississippi Valley to eastern cities at less total cost than the live animals. On the other hand, the rate structure is favorable to the movement of live animals from the western part of the corn belt to the Pacific Coast states. Unless the rate structure is modified, it will further tend to encourage slaughter in the western corn belt of livestock, the products of which are consumed in the East.

IMPORTANCE AND GENERAL TRENDS OF THE MEAT-PACKING INDUSTRY

Importance in the United States

Of interest are the general relationships of the meat-packing industry. Meat-packing is more than a Kansas enterprise. It is a national industry, and an important one. Not only should one appreciate its national significance, but he also should give consideration to its relationship to the meat production process, of which it is a part. Another consideration is an analysis of the industry itself to study its geographic distribution and concentration.

Of first consideration are the entire process of meat production and the integral relationships of meat-packing involved. Perhaps this distinction between the meat production process and the meat-packing function should be made clear. The process of meat production includes all those activities involved in supplying the population of the country with meat, from the birth of a calf to the sale of sirloin steak to the final consumer. Meat-packing is just one function in this integrated series of activities. This entire productive operation may, in a sense, be regarded as an industry. This is a broader concept than ordinarily considered, but it is well to recognize it here--both from the standpoint of its national importance and from that of the significance of meat-packing as one of its functional activities.

It is also important to observe the position the meat-packing industry itself occupies in this important production process. Data compiled by Tobin and Greer give a relatively accurate picture of the importance of the industry. Table 1 indicates that only 15 percent of the consumer's dollar is taken for the performance of the meat packer's function. In other words, a large part

of the value of the finished product is added both preceding and following the packer's addition in the process of production.

Table 1. Distribution of the American consumer's meat dollar to the various functions contributing to production of the final product, 1925-1934 inclusive, all meats./10

Function	Amount in cents
Retailer's margin	26
Wholesaler's margin	5
Packer's margin	15
Marketing cost	4
Farm value	50
Total: Retail price	$1.00

It is a difficult problem to compare statistically the process of meat production with other similar processes because there are no specific data readily available for this purpose. However, the Census of Manufacturers' classification of industries, with certain limitations, and the total value of production give some indication of comparative importance./11

The data in Table 2 show the factory value of the products of the leading manufacturing industries in the United States. Distributive costs are ignored. This is a significant weakness because there is considerable difference in marketing costs of the finished products of different types. But for practical purposes and indications of significance the data are useful. They show that meat production is as important as either of the two parts of the automotive industry. It might also be logically argued that, in final value, steel products probably would exceed that of meat products. Nevertheless, meat production occupies an important position in American industry.

Table 2. Total value of product of the ten leading manufacturing industries in the United States, 1929-37 inclusive./11

Industry	Rank	Total value of product (Five-biennium average) (000)
Meat-packing	1	$2,451,057
Motor vehicles	2	2,376,914
Steel works and rolling mills	3	2,234,865
Petroleum refining	4	1,986,590
Motor vehicle bodies and parts	5	1,376,914
Printing and publishing	6	1,348,079
Foundries and machine shops	7	1,312,968
Electrical machinery, apparatus and supplies	8	1,286,376
Bread and bakery products	9	1,259,434
Cotton woven goods	10	985,396

For the same five-biennium average, the meat-packing industry ranked twelfth in the census classification of value added by manufacture and fourteenth in the number of wage earners employed. It is also significant that it exceeds all other food industries in value of production and is the most important single agricultural manufacturing industry in the United States. These facts are supported by the data presented in Tables 3 and 4.

Table 3. Shopping list expenditures, 1938.

Item	Percent of total expenditures for food	Amount spent
Meat products and fish	32.7	$ 4.08
Dairy products and eggs	17.8	2.23
Canned goods	14.8	1.86
Fresh fruits and vegetables	12.0	1.51
Beverages, seasoning, and desserts	11.8	1.47
Flour, bread, and cereal products	10.9	1.35
All combined	100.0	$12.50

Table 3 shows the amounts of the consumer's food budget spent for each article of food as determined by a study made by Lazo and Bletz in 1938./5

By far the greatest proportion of the consumer's food budget was allotted to meat products and fish, 32.7 cents of each dollar spent for food being spent for meat products and fish. This proportion probably is slightly high, as a comparison of the percentage of total food expenditures allotted to meat products and fish in this study with that in the study by Lough made in 1929 shows that, while Lazo and Bletz allotted 32.7 percent of the food budget to meat and fish, Lough allotted but 23.5 percent./7 This serves to indicate something of the importance of meat in the national diet. The fact that the housewife is willing to allocate at least one-fourth of her total food budget to meat products and fish indicates that she considers meat an important item in the diet.

As meat is a major source of expenditure to the consumer, so is it an important source of income to the producer, the farmer. Table 4 shows the cash farm income in Kansas and the United States by commodities and government payments for the five years 1936-1940.

It is apparent from Table 4 that livestock and livestock products have been the most important source of income to farmers both in Kansas and in the United States, 55.8 percent of the total cash farm income in Kansas being attributed to livestock and livestock products and 53.3 percent for the United States as averages for the period 1936-1940.

Crops provided 34.2 percent of the total cash farm income for Kansas and 40.3 percent of the total cash farm income in the United States. In Kansas, wheat is by far the most important single crop, producing 28.8 percent of the total cash farm income as an average for the period 1936-1940, and 23.8 percent in 1940.

Similarly, cattle are an important source of income to the Kansas farmer.

Table 4. Cash farm income in Kansas and the United States by commodities and government payments, 1936-1940./2,3

Commodity	Kansas				United States			
	Average 1936-1940		1940		Average 1936-1940		1940	
	Income (000)	Percent of total	Income (000)	Percent of total	Income (000)	Percent of total	Income (000)	Percent of total
Total crops	$100,046	34.2	$ 89,450	30.4	$3,520,359	40.3	$3,535,712	38.7
Wheat	34,351	28.8	69,969	23.8	466,983	5.3	447,044	4.9
Corn	2,847	0.9	3,755	1.3	288,967	3.3	369,777	4.0
Other grains	1,147	0.3	853	0.3	171,056	1.9	201,329	2.2
Other crops	11,728	4.0	14,873	5.0	2,593,341	29.7	2,517,562	27.6
Total livestock and livestock products	163,183	55.8	165,624	56.3	4,653,103	53.3	4,818,392	52.8
Cattle and calves	79,231	27.1	83,002	28.3	1,223,209	14.0	1,380,170	15.1
Hogs	22,822	7.8	21,737	7.4	879,031	10.0	820,802	9.0
Sheep and lambs	4,376	1.4	4,875	1.6	178,478	2.0	189,402	2.0
Poultry and eggs	22,830	7.8	21,973	7.5	761,733	8.7	727,732	7.9
Dairy products	30,686	10.5	31,024	10.6	1,448,600	16.6	1,501,126	16.4
Other livestock products	4,433	1.5	2,967	1.0	154,647	1.7	162,353	1.7
Government payments	27,821	9.5	38,941	13.2	541,847	6.2	765,799	8.3
GRAND TOTAL	292,309	100.0	293,969	100.0	8,715,309	100.0	9,119,903	100.0

As an average for the period 1936-1940, 27.1 percent of the total cash farm income of Kansas farmers were from cattle and calves, and in 1940, 28.3 percent were from this source.

One should not be misled as to the importance of the meat-packing industry by the dependence of its position on the livestock producer and the consumer. The form-changing function is one of the more important functions in any productive process. It occupies an important position in the pricing process and, to quite an extent, the importance and significance of the entire livestock and meat industry are dependent upon its efficiency. Figuratively speaking, this function is more or less the lubricant that results in the smooth coordination of livestock production and meat distribution.

The Biennial Census of Manufacturers, published by the United States Department of Commerce gives a detailed classification of the industries of the country and a number of different series of data concerning these various industries. On the basis of these data, statements of the importance of meat-packing usually are made. It usually is pointed out that, on the basis of the value of product series contained in this publication, meat-packing is the most important single industry in the country./11

For the period 1929-1937, meat-packing ranked above all other industries in total value of product produced.

Importance and Trends by Regions in the United States

The relative importance of the various sections of the United States as centers of meat-packing since 1889 is shown in Fig. 1 and Table 5. The eastern Corn Belt, although somewhat less important now than formerly, has been and probably will continue to be the most important meat-packing center of the United States

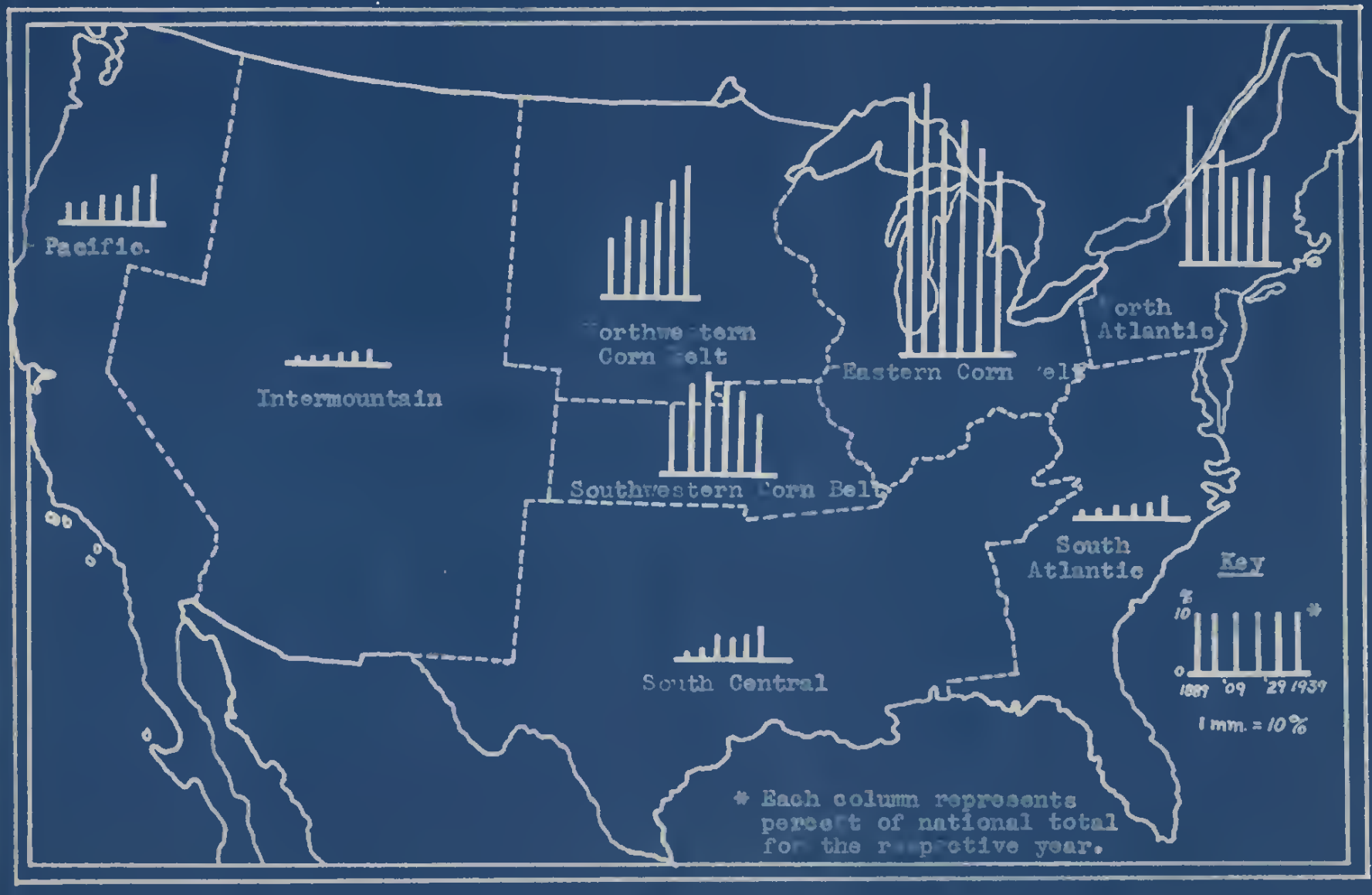

Fig. 1 Sectional trends in the value of products of the meat-packing industry in the United States, by ten-year periods, 1889-1939. 11

Table 5. Sectional trends in the value of products of the meat-packing industry in the United States, by ten-year periods, 1889-1939./11

Section of United States	Percent of national total[2]					
	1939	1929	1919	1909	1899	1889
North Atlantic	15.30	16.52	14.83	19.58	17.70	26.76
South Atlantic	2.90	2.08	1.44	1.36	0.86	0.99
South Central	5.46	3.83	3.42	3.78	1.37	0.98
Intermountain	1.82	1.45	1.38	0.86	0.62	0.52
Pacific	7.98	5.87	3.53	4.12	2.76	2.73
Eastern Corn Belt	33.38	36.25	42.56	39.80	47.88	45.76
Northwestern Corn Belt	23.06	20.08	16.42	13.08	13.39	10.36
Southwestern Corn Belt	10.10	13.92	16.42	18.14	15.50	11.90
Total	100.0	100.0	100.0	100.0	100.0	100.0

[2]Adjusted to 100 percent. The states included in the unadjusted sample accounted for approximately 95 percent of the total value of meat-packing products in the United States.

The area showing the most marked change during these 50 years is the northwestern Corn Belt. Beginning in 1889 with just over 10 percent of the national total value of meat-packing products, this area has increased its volume until it now produces 23 percent of the nation's total value of meat-packing products. The increase in this area can be attributed chiefly to the growth of the interior packers in Iowa and southern Minnesota, Nebraska being less important as a meat-packing state now than formerly, and the other states in this area having made but relatively small gains.

The Pacific states, principally California, have made a substantial gain in the percentage of the nation's total value of meat-packing products which they produce, rising from 2.7 percent in 1889 to nearly eight percent in 1939. The trend here directly affects the Kansas packer in that large numbers of Kansas hogs are shipped to California.

The intermountain states, the South Central, and the South Atlantic states, while constituting but a small percentage of the nation's meat-packing business at present, have been steadily increasing in importance as meat-packing states and this may indicate a trend which may be expected to continue.

The value of the product of the meat-packing industry in the southwestern Corn Belt as a percentage of the nation's total has decreased steadily since 1909, due to the increasing importance of other sections of the United States and during the last ten years, to a reduction in the available livestock supplies.

The importance of the North Atlantic states has also decreased relative to the national total, principally because of the growth of the industry in the other sections of the United States.

Table 6 shows the leading meat-packing states on the basis of value of product in 1919, 1929, 1937, and 1939. In considering the changes that have

taken place in state rankings of value of product in the packing industry over the last 20 years a number of noticeable shifts can be pointed out.

Table 6. The ten leading states in value of product from meat-packing operations in the United States, 1919-1939./11

State	Value of product 1919 (000)	Rank 1919	Value of product 1929 (000)	Rank 1929	Value of product 1939 (000)	Rank 1939
Illinois	$1,248.1	1	$760.9	1	$479.5	1
Kansas	427.7	2	273.6	2	143.9	6
Nebraska	303.8	3	208.9	5	117.7	8
New York	256.0	4	247.4	3	155.4	5
Missouri	246.6	5	180.9	7	107.3	9
Iowa	226.3	6	244.7	4	257.3	2
Ohio	170.3	7	163.2	8	132.5	7
Minnesota	146.4	8	201.2	6	198.1	3
Indiana	134.0	9	Does not rank in first ten			
Texas	125.2	10	Does not rank in first ten			
California	Not in first ten		139.0	9	156.9	4
Pennsylvania	Not in first ten		132.8	10	101.0	10

Broad implications as well as specific changes may be recognized. A broad, though not necessarily important, change may be noted in the relative importance of the Corn Belt. In 1919 eight of the ten leading states were in the Corn Belt. In 1929 and 1939 this had been reduced to seven. The relative ranking of the states outside the Corn Belt also showed a rise. In 1919, the two outside states ranked fourth and tenth; in 1929, the three outside ranking states were third, ninth, and tenth; and in 1939 they shifted to fifth and tenth. But, as stated, these facts are not necessarily significant. They are merely indications, and further development is necessary.

More specific observations bring out some marked shifts within the Corn Belt. For instance, the state of Iowa moved from sixth place in 1919 to fourth in 1929, and then to second in 1937. Minnesota, adjoining Iowa, likewise

showed a marked rise, from eighth in 1919 to sixth in 1929 and third in 1939. To the south and west of these states, however, apparently the reverse had taken place. The rankings of Kansas, Nebraska, and Missouri had all materially declined. For the three periods considered, Kansas ranked second, second, and sixth respectively. Missouri's rankings were fifth, seventh, and ninth, and Nebraska's were third, fifth, and eighth.

It is also interesting to note the rise of the state of California both in relative and absolute position. Minnesota and Iowa are the only other states included among the leaders which showed a larger value of production in 1939 than in 1919, and California and Iowa are the only states showing an increase from 1929 to 1939. Minnesota remained about steady during this period, and all the others declined.

Combining the figures for value of production into areas gives specific and definite data supporting the implications suggested as shown in Table 7.

Table 7. Value of product of the meat-packing industry in 1939 for the United States and various component parts of the country./11 (Expressed in thousands of dollars and in percent of national total.)

Territory	Value of product $1,000	Percent of national total
States outside of Corn Belt	$ 945,620	35.7
Corn Belt[3]		
Eastern section	829,582	31.3
Northwest section	621,984	23.5
Southwest section	251,140	9.5
Kansas (included in southwest)	143,886	5.4
Total Corn Belt	1,702,706	64.3
Total United States	2,648,326	100.0

[3]The eastern section of the Corn Belt includes Ohio, Indiana, Michigan, Illinois, and Wisconsin; the northwestern section includes Minnesota, South Dakota, Iowa, and Nebraska; and the southwestern section includes Missouri and Kansas.

The Corn Belt is definitely the meat-packing region of the country. Sixty-four percent of the meat packed in the United States was done in the Corn Belt in 1939, leaving only 36 percent for the states outside the Corn Belt. The eastern states of the Corn Belt did approximately 31 percent of the nation's packing, the northwestern states approximately 24 percent, and the southwestern group approximately 10 percent; Kansas, included in this latter group, contributed about six percent of the nation's total.

Extending these figures back 20 years shows that in 1919 about 73 percent of the nation's meat-packing was done in the Corn Belt (Fig. 2). This percentage tended downward to 63 percent in 1935 and in 1937 raised slightly to about 65 percent. In 1919 the eastern five states of the Corn Belt did 41 percent of the nation's meat-packing. This dropped to nearly 30 percent in 1927 and since then has held relatively steady around 33 and 34 percent.

The northwestern section of the Corn Belt is the only one of the three groups showing a relative increase in meat-packing operations over this period. In 1919 these states did approximately 16 percent of the nation's packing and by 1937 this had increased to nearly 21 percent. The southwestern group started with 16 percent of the national total in 1919 and steadily declined to slightly less than 10 percent in 1939. In Kansas there was a steady decline in the relative importance of the state's packing operations from 10 percent in 1919 to 5.4 percent in 1939.

The relationship of operations in Kansas with those in surrounding states is interesting. The actual volume of slaughter in Kansas by classes is shown in Table 8. Figure 3 shows the trend of actual volume of slaughter in pounds since 1919. This is more significant in showing trend of operations than value of product because the data are not biased by changes in the price of meat.

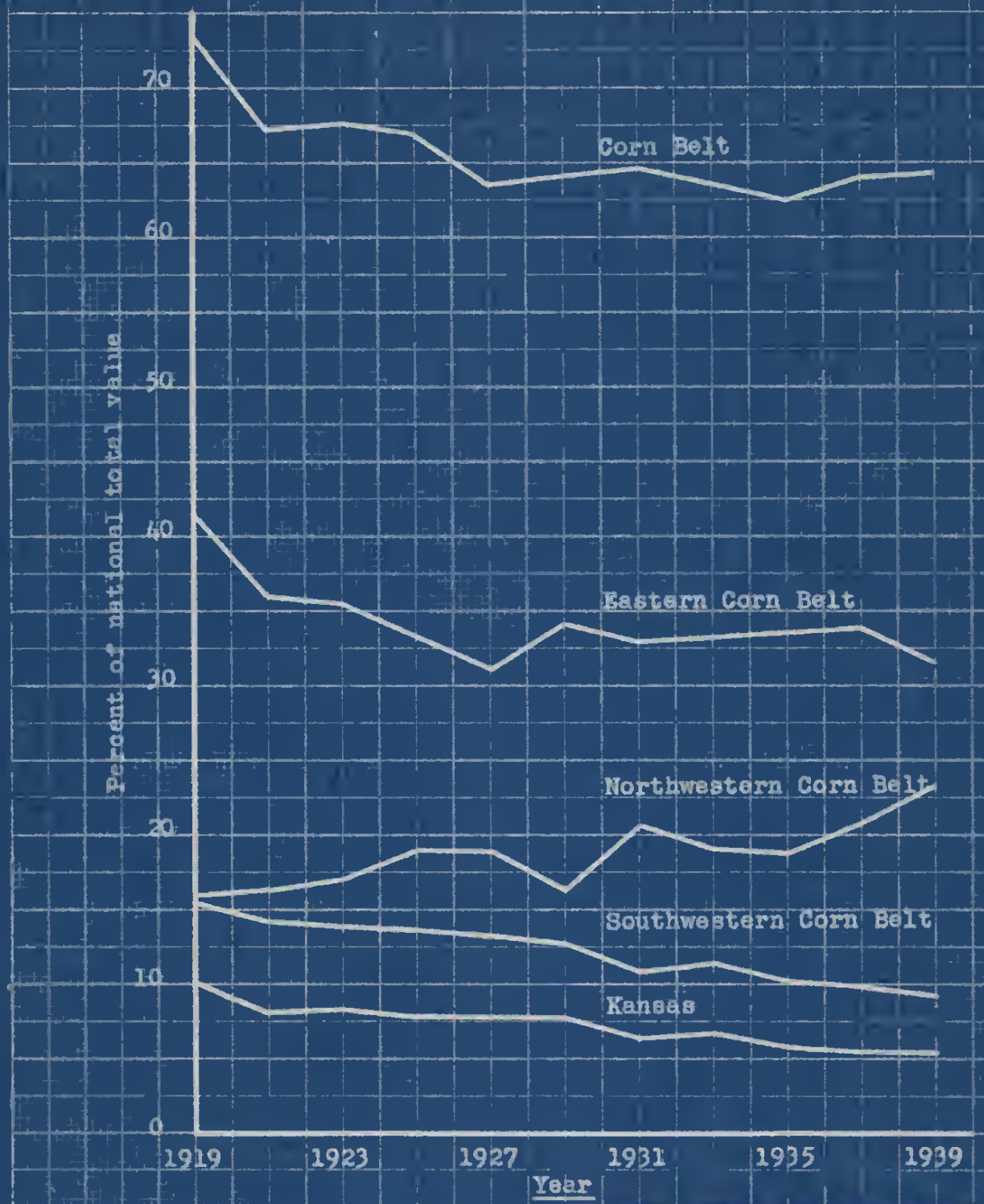

Fig. 2 Value of product of the meat-packing industry for the Corn Belt, Corn Belt by sections, and Kansas, 1919-1939. 41

Table 8. Trend of weight of slaughter and number of animals slaughtered by classes for the state of Kansas during the period 1919-1939./11

	Cattle		Veal		Hogs		Sheep		Total
	Number	Weight	Number	Weight	Number	Weight	Number	Weight	pounds
	(000,000)	(000,000)	(000,000)	(000,000)	(000,000)	(000,000)	(000,000)	(000,000)	(000,000)
		lbs.		lbs.		lbs.		lbs.	
1919		674.5		51.3		705.7		43.4	1,474.8
1921		568.5		34.6		551.8		49.8	1,204.7
1923		606.9		54.1		846.7		44.0	1,551.8
1925	1.38	665.1	.46	60.1	3.30	578.8	1.21	47.3	1,351.2
1927	1.20	595.5	.33	43.1	3.14	565.1	1.25	47.8	1,251.6
1929	.96	474.7	.25	31.5	4.33	778.8	1.44	56.4	1,341.4
1931	.83	421.3	.25	31.5	3.00	530.9	1.57	60.0	1,043.7
1933									
1935	.92	423.1	.49	68.9	1.91	309.7	1.37	54.9	856.6
1937	.95	423.1	.52	73.4	1.75	289.9	1.40	55.5	842.0
1939	.80	400.5	.34	47.0	2.38	399.8	1.43	54.0	901.3

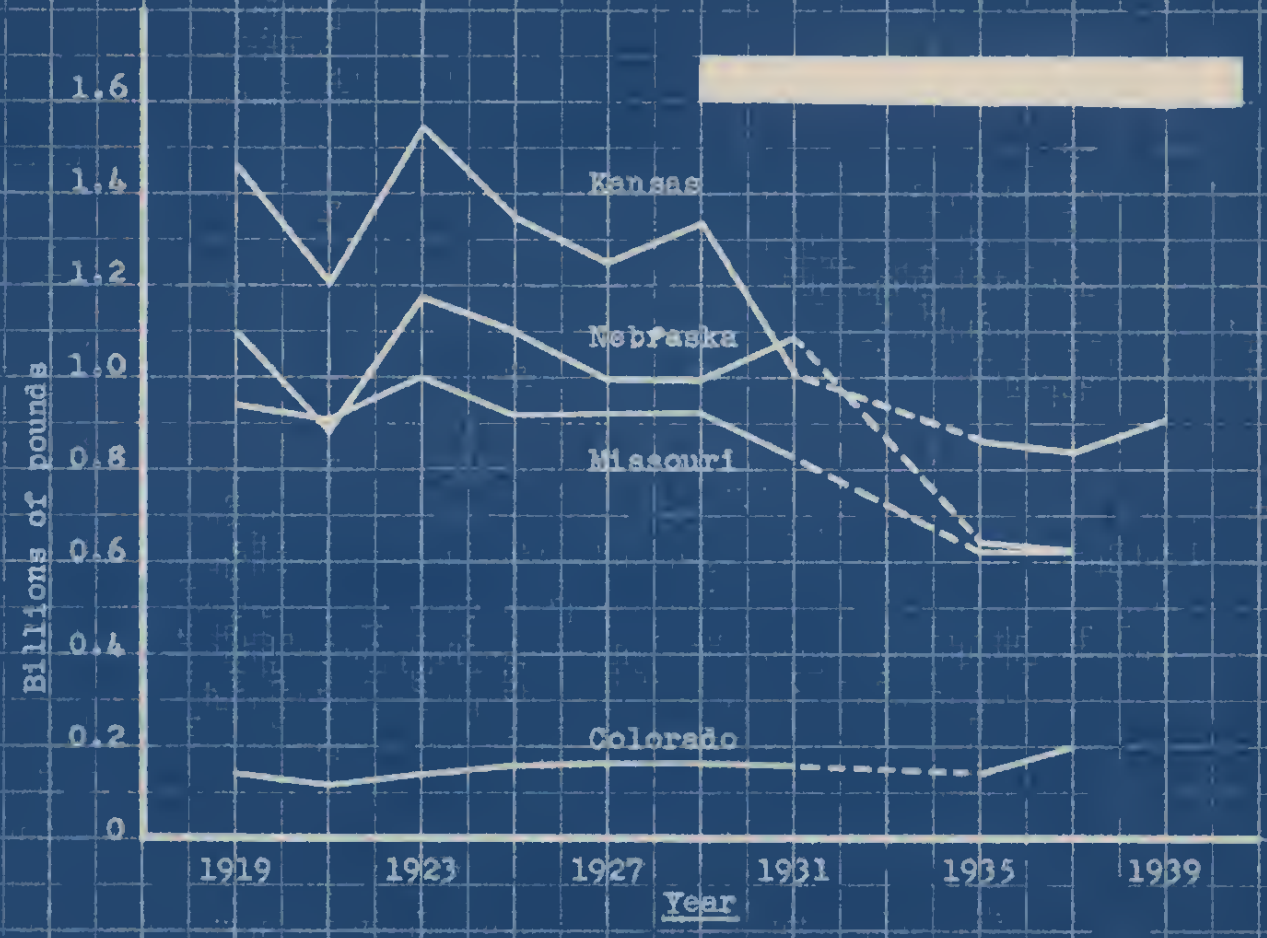

Fig. 3 Pounds of total slaughter in Kansas and adjacent states as reported to the Census of Manufactures, 1919-1939. /11

Since 1919 in all of the states except Colorado the trend was definitely downward. The decline in Kansas was from approximately one and one-half billion pounds in 1923 to approximately nine-tenths billion pounds in 1939. The actual volume of slaughter in Nebraska declined from one and two-tenths billion in 1923 to eight-tenths of a billion in 1939. Missouri declined from approximately one billion to six-tenths billion during the same years. In Kansas and the three adjoining states total slaughter of meat declined from approximately 3.8 billion pounds annually in 1923 to 2.5 billion pounds in 1939--a decrease of approximately 33 percent. Also of interest is the fact that most of this decrease occurred since the beginning of the present decade. At the same time, the number of plants (Table 9) remained about the same through 1937 and increased sharply through 1939. This decline in volume of slaughter is significant. It has resulted in the problem of unused capacity in many plants in this area.

Table 9. Number of packing plants in Kansas and adjacent states (except Oklahoma) 1919-1939./11

Year	Kansas	Nebraska	Missouri	Colorado	Total
1919	28	16	49	21	114
1921	28	15	44	19	106
1923	31	17	44	30	122
1925	32	17	47	27	123
1927	29	14	45	25	113
1929	28	15	49	25	117
1931	28	17	43	20	108
1933	29	15	36	20	100
1935	33	17	45	19	114
1937	37	17	40	19	113
1939	41	27	53	26	147

The relative importance of Kansas in the meat-packing industry, compared with adjacent states, has declined. While Kansas did 42 percent of the

area's packing in 1919, in 1937 it did 37 percent and in 1939, 36 percent. Nebraska's portion likewise has been reduced. It has dropped from 30 to 27 percent. On the same basis, Missouri raised slightly and Colorado did more than twice as much in 1937 as in 1919, climbing from four percent of the area's total to approximately 10 percent. The data for Oklahoma are incomplete and were, therefore, omitted.

Importance and Trends of the Industry in Kansas

The first logical step in considering the importance of meat-packing to Kansas and its industries is to compare it with the other leading manufacturing industries in the state. Table 10 shows this comparison on the basis of census of manufacturing data for 1939, showing the five leading industries in the state of Kansas on the basis of value of product, value added by manufacture, number of wage earners, and wages and salaries paid in 1939.

Table 10. Value of product, value added by manufacture, wages and salaries paid, and number of wage earners of the five leading industries in Kansas in 1939./11

	Value of product (Million)	Value added by manufacture (Million)	Wages and salaries paid (Million)	Number of wage earners (actual)
1. Meat-packing	144	19.7	11.3	7,384
2. Petroleum products	89	15.2	6.2	3,000
3. Mill products	70	14.2	4.1	2,418
4. Butter making	21	3.2	1.1	889
5. Printing and publishing	12	9.2	3.7	1,571

The data show meat-packing to be the leading manufacturing industry in the state. It not only leads in total value of production but also exceeds all other industries in value added by manufacture (Fig. 4) which is the measure of the contribution of industry. Furthermore, it ranks at the top in wages and salaries paid, and number of wage earners. Meat-packing employs nearly as many individuals as all the other four leading industries in Kansas combined (Fig. 5). Of course, it may be contended that the state of Kansas does not receive the full benefit of all this industrial activity of meat-packing because the larger share of meat-packing plants are concentrated in Kansas City close to the state of Missouri. Since this is true, a portion of the benefit derived from meat-packing does not come to the state of Kansas; consequently, Kansas cannot lay full claim to that industry. This is a valid consideration. It is undoubtedly true that this sharing is more marked in the case of meat-packing than in any of the other leading manufacturing industries considered. However, even when allowance is made for this, statistics show that meat-packing would be one of the three leaders in all respects and very likely either first or second in number of wage earners employed, wages and salaries paid, and value of production.

Over the last 20 years this relationship has been approximately the same. In terms of absolute figures, meat-packing and mill products showed a downward tendency in all of the items considered. The other three either held steady or increased. Generally speaking, this decline was somewhat more pronounced in meat-packing than in milling. However, meat-packing still holds the leading position of the five by a large margin.

The same general relationships hold true in number of wage earners employed (Fig. 5). In this series, meat-packing had more wage earners and paid more in wages and salaries than the other four leading industries combined. The 1939

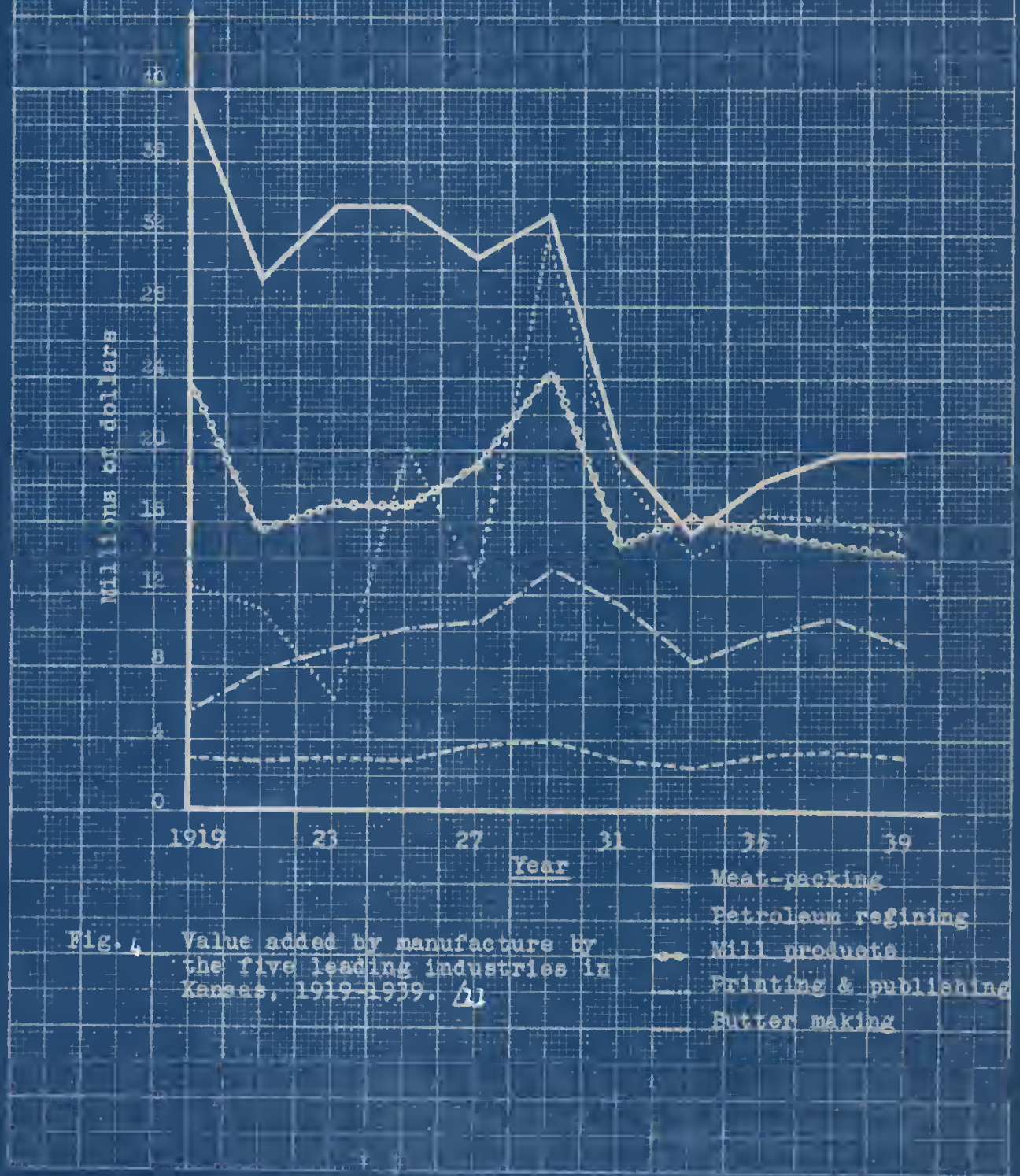

Fig. 4 Value added by manufacture by the five leading industries in Kansas, 1919-1939. Δ_1

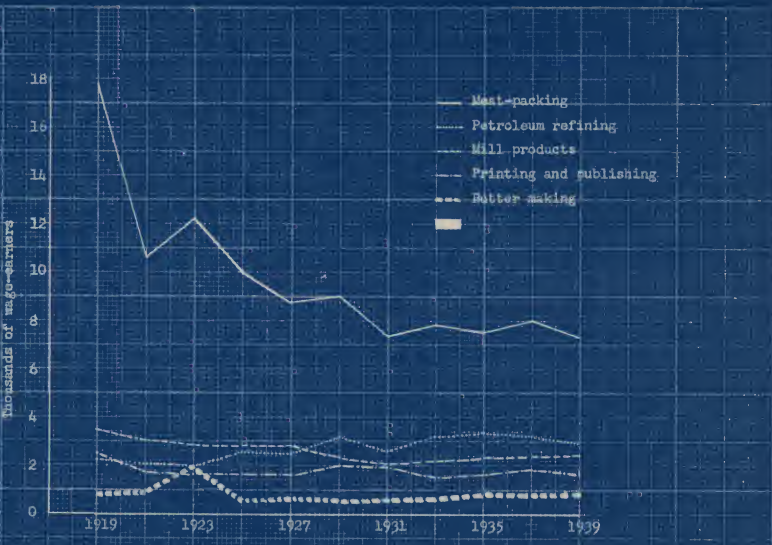

Fig. 5 Number of wage-earners in the five leading industries in Kansas, 1919-1939./11

data show that the relative importance of meat-packing had decreased but that in absolute terms it still remained the leading industry. In the case of value added by manufacture (Fig. 4) meat-packing did not hold such a tremendous advantage as in the other items but still was definitely the leader in 1919. In absolute terms, meat-packing declined and its relative position was reduced materially. In fact, since 1929 both petroleum refining and milling have threatened its leading position. In one year, 1933, milling actually exceeded meat-packing in this respect, but it has been from petroleum that the most consistent competition has come. However, meat-packing still is the leader and in 1939 increased its advantage slightly over that of the previous biennium.

Location of Meat-packing Facilities in Kansas

Figure 6 and Table 11, showing the location of Kansas meat-packing facilities in 1940, were compiled from: Questionnaires sent to Chambers of Commerce; The Buyer's Guide, compiled by the Kansas State Planning Board; the Directory of the Bureau of Animal Industry; and the records of the State Division of Unemployment Compensation.

Of the 47 packinghouses in Kansas, 14 were located in Kansas City, six in Wichita, three in Topeka, and two in Hutchinson, the other 21 being located in as many different cities.

Forty-four of these packinghouses had slaughtering facilities, the three non-slaughtering plants being located in Kansas City.

Twenty-four of the 47 packinghouses were operating under federal meat inspection. Of these, 14 were located in Kansas City, four in Wichita, three in Topeka, and one each in Pittsburg, Leavenworth, and Arkansas City.

It is unfortunate that little specific information is available on the

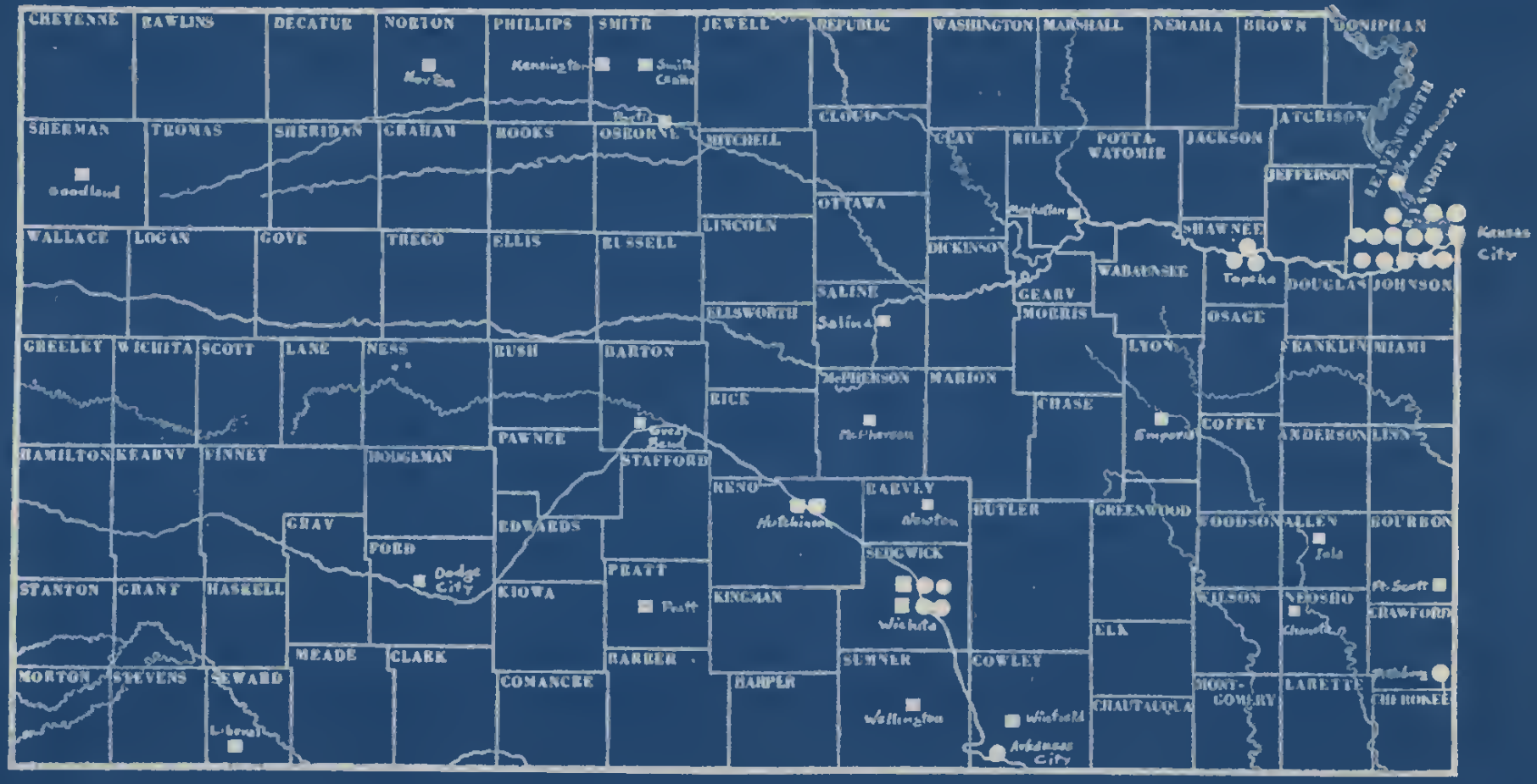

Fig. 6 Location of meat-packing plants in Kansas, 1940.

● Federally inspected plants
■ Plants not Federally inspected

Table 11. Location of Kansas meat-packing facilities, 1940.[4]

City	Name of plant	Federal inspection	Slaughtering facilities
Arkansas City	Keefe Packing Co.	Yes	Yes
Chanute	Earl Wertz Packing House	No	Yes
Dodge City	Geo. J. Lockman Packing House	No	Yes
Clay Center	Downing Packing Plant	No	Yes
Emporia	Thies Packing Co.	No	Yes
Fort Scott	Fort Scott Packing Co.	No	Yes
Goodland	O.K. Packing Co.	No	Yes
Great Bend	Thies Packing Co.	No	Yes
Hutchinson	Fanestil-Greiner Packing Co.	No	Yes
Hutchinson	Winchester Packing Co.	No	Yes
Iola	M. & M. Packing Co.	No	Yes
Kansas City	Armour & Co.	Yes	Yes
"	Cudahy Packing Co.	Yes	Yes
"	Eldridge Packing Co.	Yes	Yes
"	Geo. Kaiser Packing Co.	Yes	Yes
"	Kansas City Dressed Beef	Yes	Yes
"	Kauffman Packing Co.	Yes	Yes
"	Levy Meat Co.	Yes	No
"	Meyer Kornblum Packing Co.	Yes	Yes
"	Loschke & Stelling Meat and Sausage Co.	Yes	No
"	Maurer Packing Co.	Yes	Yes
"	Sambol Packing Co.	Yes	Yes
"	Swift and Co.	Yes	Yes
"	Williams Meat Co.	Yes	No
"	Wilson & Co.	Yes	Yes
Kensington	Wolfe Packing Co.	No	Yes
Leavenworth	Leavenworth Packing & Cold Storage Co.	Yes	Yes
Liberal	Blackemore Packing Plant	No	Yes
Linn	Hoerman Packing Co.	No	Yes
Manhattan	Manhattan Dressed Beef Co.	No	Yes
Newton	Steinkirchner Packing Co.	No	Yes
Pittsburg	Hull & Dillon Packing Co.	Yes	Yes
Pratt	Smith & Stundh Packing Co.	No	Yes
Salina	Banfield Packing Co.	No	Yes
Smith Center	Chance Packing Co.	No	Yes
Topeka	Hill Packing Co.	Yes	Yes
"	Kaw Packing & Provision Co.	Yes	Yes
"	John Morrell & Co.	Yes	Yes
Wellington	Garland & Archer	No	Yes
Wichita	Cudahy Packing Co.	Yes	Yes
"	Fred Dold & Sons Packing Co.	Yes	Yes
"	The Jacob Dold Packing Co.	Yes	Yes
"	Interstate Packing Co.	Yes	Yes
"	Dunn-Ostertag Packing Co.	No	Yes
"	Sunflower Packing Co.	No	Yes
Winfield	F. W. Smith & Sons	No	Yes
Morton	Morton Packing Co.	No	Yes

[4]Data obtained from questionnaires sent to Chambers of Commerce, from Buyer's Guide-Kansas State Chamber of Commerce, and from personal observation.

history of meat-packing plants that failed in Kansas. An analysis of the reasons for failure of plants would make a valuable addition to this study. Some indications of the number of plants in Kansas can be obtained from the records of the State Corporation Commission. These records show that over a 40-year period there have been 133 charters granted to firms indicating an intention to operate a meat-packing plant. However, it is known that many of these plants were never constructed, that some expanded into other lines of activity, and that there is some duplication because of the fact that separate corporation papers are necessary whenever ownership changes. There is no way of checking the details except by conducting specific investigations in each case. Obviously, this would involve facilities and funds beyond those available for this project. However, these figures do indicate that many unsuccessful attempts have been made to establish packinghouses in Kansas. Of added significance is the fact that these figures do not include the many individual proprietorships and partnerships that undoubtedly have met with failure.

TRANSPORTATION COSTS AND RATE STRUCTURE AS THEY AFFECT THE MEAT-PACKING INDUSTRY IN KANSAS

In this analysis, transportation costs will be considered from three viewpoints, namely, (1) from the standpoint of their influence upon location of packing operations; (2) as a cost of production in the livestock and meat industry (and the effect of this cost upon location of livestock production in the state,) and (3) as a more or less influential factor upon future trends of both the above factors and developments in marketing habits, etc., in the livestock industry.

At the outset it must be clearly realized that this is a complex subject. Definite statements in respect to the above mentioned points are not possible within the scope of this study. There is a lack of consistency in the transportation rate structure and those authentic observations which can be safely made are of such general nature that their value is limited. Consequently, the purpose here will be to present and explain certain relationships and summaries with the object of clarifying some aspects of the subject.

For convenience of presentation, the treatment of this subject will be divided into four parts: (1) the procedure involved in rate determination, (2) zones of costs of shipping live animals by rail in Kansas; (3) comparison of the truck and the railroad as a means of shipping livestock, and (4) comparison of live and dressed meat rates as they affect movement of the product and location of packing facilities.

Rate determination is discussed solely for background purposes. An understanding of the method by which rates are determined gives a basis for a better understanding of the aspects of the problems discussed later in this section.

It has been ruled that transportation is a function in the public interest and consequently the government has assumed the responsibility of regulating the prices to be charged for the service. In the case of commerce between states, the Interstate Commerce Commission is vested with the power of fixing the actual rate that will be charged. In the case of intrastate commerce, that traffic within the state of Kansas, the Corporation Commission is the regulating body, and is given the legal power to fix only the minimum, which may be the maximum, and to the extent that this is true, the Corporation Commission has in effect the same power as the Interstate Commerce Commission.

As long as the rates charged are satisfactory to all parties concerned, the Corporation Commission has no authority to order them changed. However,

if a carrier or a shipper wishes a change in the existing rate for any commodity between any points, that desired change, stated in specific terms, must be filed with the Commission. If it is a carrier desiring to change certain rates, those specific changes have to be filed. The carrier is then required to publish these changes for a certain period before they go into effect. If no one objects to the specific changes, they become effective automatically upon the date indicated. However, if complaint does arise, a hearing is held. At this hearing the interested parties present evidence in support of their respective positions. The commission hears both sides of the case, and from the evidence presented, plus a general background of the situation which it possesses, renders a decision. If the proposed rate is not unreasonably low, it is approved. However, if the commission rules conversely, it has the power to state specifically what the minimum shall be. Its decision is final and legally binding to all parties concerned. In this way the Corporation Commission exercises its influence over the freight rate structure within the state.

On brief consideration the procedure is impressive. It appears to be a very fair and thorough method of handling the problem; and it is true that in its setup and outlines it is sound. But in actual practice certain difficulties exist which are significant. The Commission is composed of a relatively limited personnel. The structure of transportation tariffs with which they have to deal is inconceivably complex. Hundreds of commodities are involved between thousands of combinations of points. Each situation is different. The immensity of the problem is indicated by a statement made by Locklin in "Economics of Transportation" (1938), using estimates made by Bogen (1928) as his basis./6 He says that there are approximately 49,000,000 individual freight rates covering shipments between different points in the United States. With such a combination of personnel and rate structure, it would be expected

that lack of uniformity would be the predominant situation. Such is the case--discrepancies are the rule rather than the exception.

There is another consideration which should be recognized before making any further analysis. There are two kinds of discrimination--just and unjust. Not all of these differences are without reason. A number of factors have to be taken into consideration in determining tariffs--cost of the service, competition from other types of transportation, type of terrain covered, and distance which the goods are hauled. Thus, many times where discrepancies are observed solely from the comparisons of distances, there may be justification which has been entirely overlooked.

Zones of Costs of Shipping Live Animals by Rail in Kansas

In making the analysis of freight rate structure, the first step was to make a map showing the approximate zones of distance of different parts of the state from the point of destination. This point, for purposes of this analysis, is Kansas City, Kansas (Fig. 7). This provides a basis for determining the consistency of the actual rates which will be presented.

The specific treatment employed here has involved obtaining the actual rates charged for livestock from representative points in all 105 Kansas counties.[5] These rates are as of April 1, 1940. A number of modifications in livestock tariffs have been made since that time, but none of these changes would affect materially the conclusions drawn from this analysis. The figures used here are for full carload shipments.

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[5]These rates were obtained through the courtesy of the State Corporation Commission and the respective railroads serving these several points.

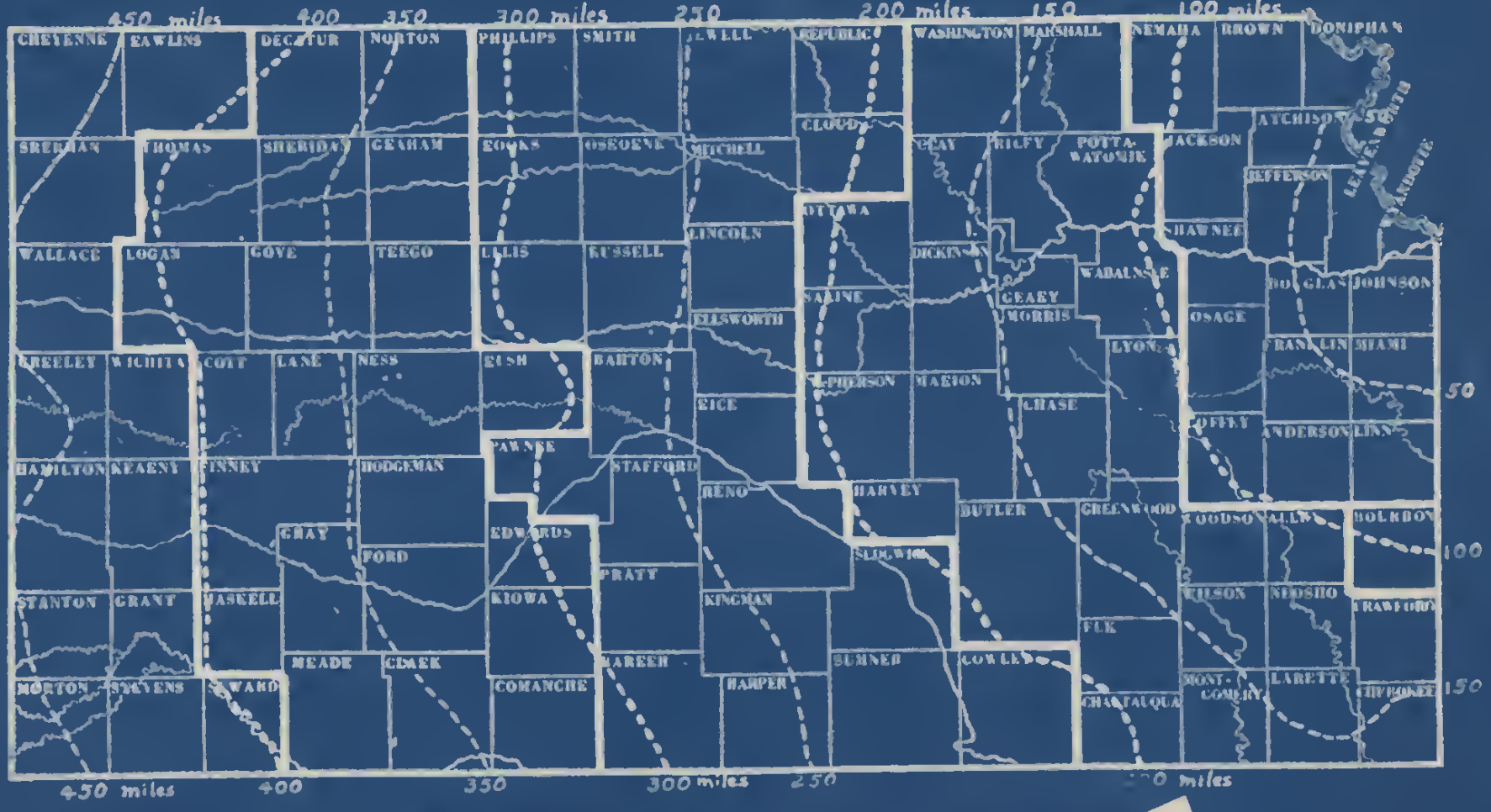

Fig. 7 Rail distance zones from Kansas City, Kansas[6]

[6] Map of Kansas - Rand and McNally.

When these tariffs had been tabulated, they were arrayed according to distance of the point from Kansas City and were compared with a hypothetical rate calculated solely on the basis of distance. The scale set up by the Missouri Pacific Lines to apply to intrastate commerce in Kansas was used as the basis of this calculation. Then zones of actual rates were mapped (Fig. 8). On another map the zones of these hypothetical rates were drawn, using the distance of each respective point from Kansas City, Kansas, as the base. On this same map those areas which were between the two isopleths (the actual and the hypothetical) were shaded to show the discrepancy. (Fig. 9)

Since the actual rates were always the same as, or below the hypothetical distance rates, the shaded areas represent those counties whose representative point enjoys a rate advantage. Then for all 105 points the specific differences between the rates were calculated. These differences were grouped into class intervals and then mapped to show geographic concentration of discrepancies. (Fig. 10)

This procedure was followed with cattle and hogs (double deck). The rate for sheep (double deck) is always the same as the cattle rate, so no separate analysis was made for that species.

Figure 8 shows the zones of rates actually charged for cattle by rail at 5-cent intervals, representing the approximate shipping cost for the different sections within the state. In the north-central part of the state there is a wide area included in the 25-cent zone. The 30-cent boundary also seems to swing unduly westward. Two other departures may be noted. The 20-cent boundary, in the southeastern part of the state, instead of following the general pattern of an equa-radial arc around Kansas City, breaks sharply and actually goes directly away from the point of destination. The other instance is in

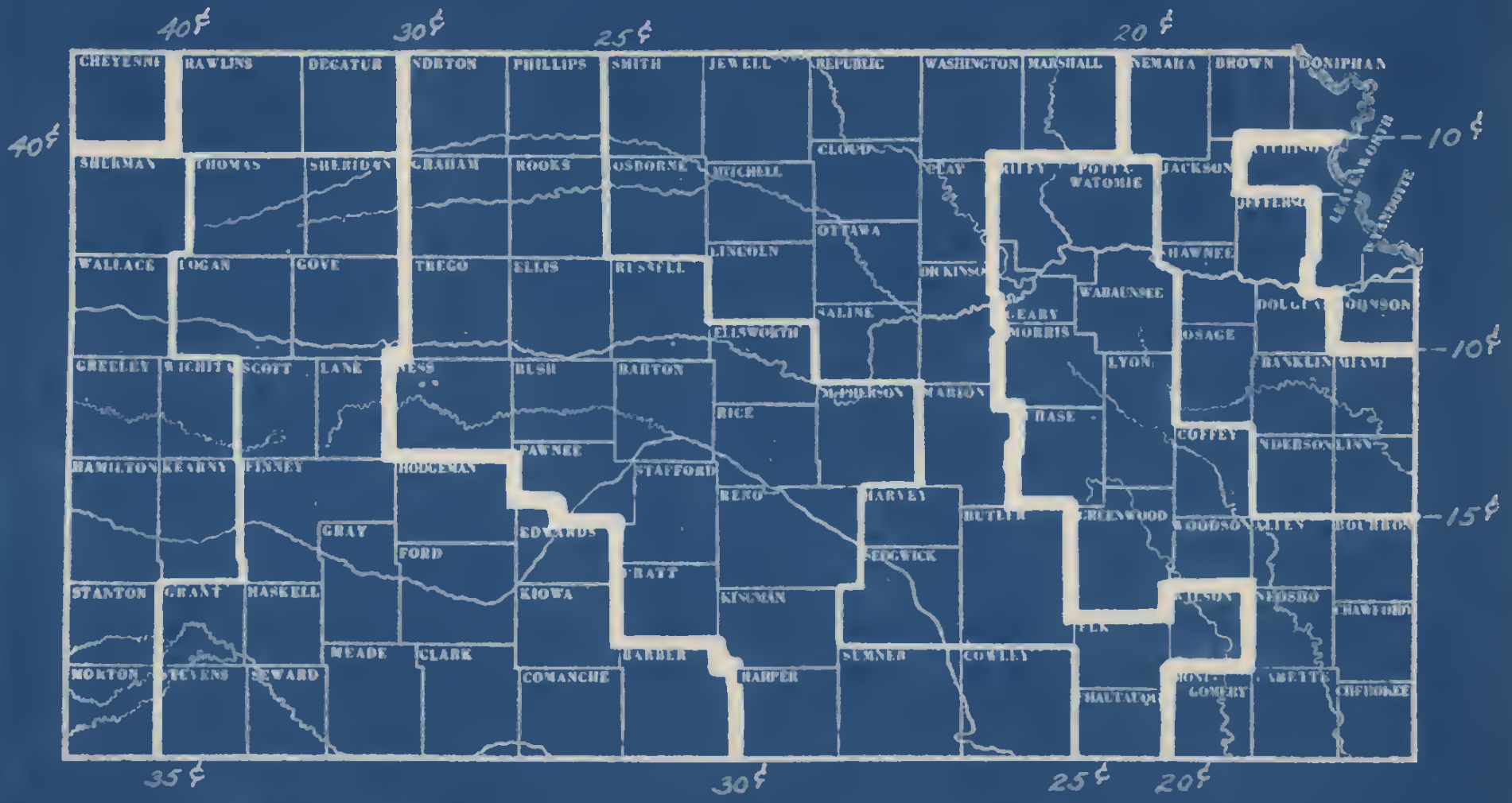

Fig. 8 Zones of actual cattle freight rates from Kansas City, Kansas (Rates per cwt. as of April 1, 1940).

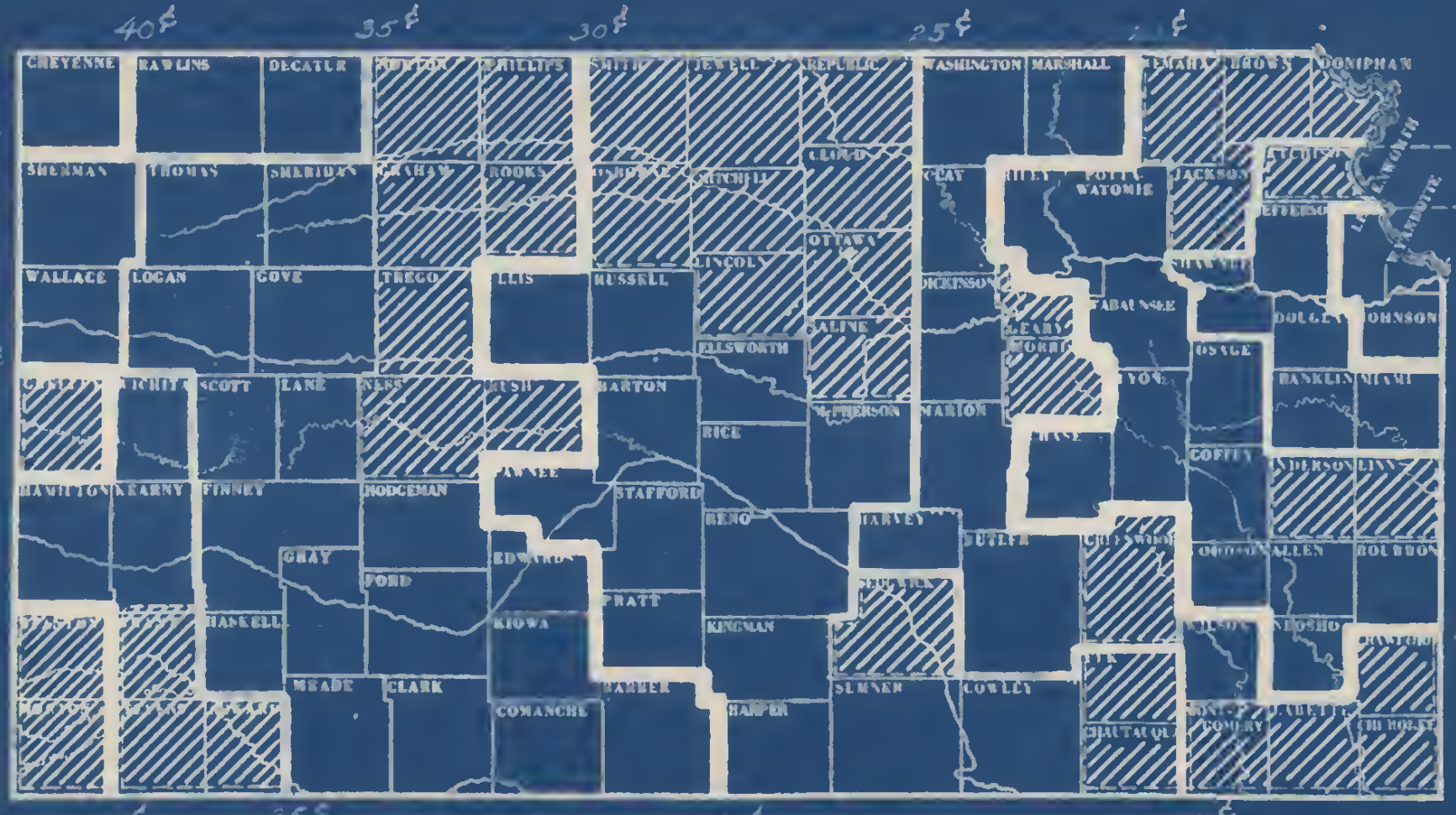

Fig. 9 Comparison of hypothetical distance rate zones with actual freight rate zones for cattle from Kansas City by rail. (The heavy lines represent hypothetical rate zone boundaries; the light, dotted lines surrounding the shaded areas represent the actual zone boundaries where those depart from the former.)

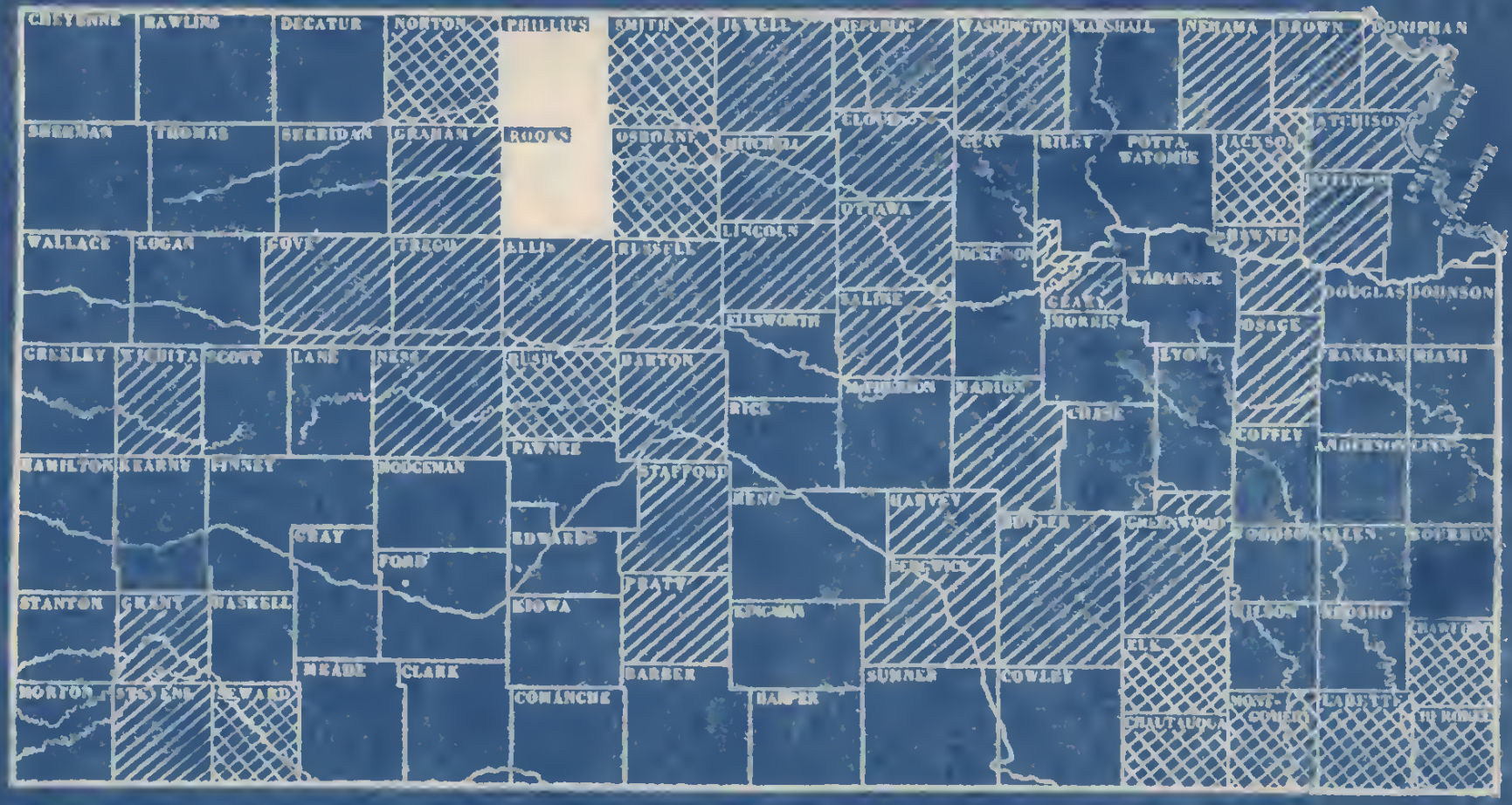

Fig. 10 Difference between actual and hypothetical rail freight rates for cattle from Kansas City.

(Rates per cwt. as of April 1, 1940. Actual rates lower in all cases)

Legend

5¢ or more

4¢

3¢

2¢ or less

the southwest part of the state where the 35-cent isopleth swings to the west instead of to the east as would be expected.

From this map some general observations can be made. The two accompanying maps, Figs. 9 and 10 based on freight rates obtained from the railroads serving 101 points in Kansas, verify these general notions with more specific analyses. The first of these shows the differences between the zones of actual rates and the hypothetical zones calculated on the basis of distance. The shaded portions represent the differences between the two isopleths. Observations from the previous map are definitely borne out here. A number of minor differences occur, but in general the north-central, extreme southeastern, and extreme southwestern parts of the state enjoy cattle rate advantages. An area not mentioned in connection with the previous map, which enjoys a rate advantage, is the extreme northeastern part of the state.

The second map, Fig. 10, gives the picture of the differences by counties between the actual and hypothetical rates. Here the differences are grouped into class intervals and mapped with different shades. The concentrations are essentially the same as indicated in the above discussions. The north-central, southeastern and northeastern parts of the state enjoy a shipping advantage to Kansas City for cattle. The advantage in the southwestern part of the state seems less important.

In examining the map (Fig. 11) showing the freight rate zones for shipping hogs, the extreme discrepancies that were found in the case of cattle do not exist. Only in the southeastern and the southwestern parts of the state is the situation out of the ordinary. In the southeast, the 25-cent isopleth follows about the same line as did the 20-cent isopleth in the case of cattle. In the southwest the 40-cent isopleth follows about the same direction as the 35-cent isopleth.

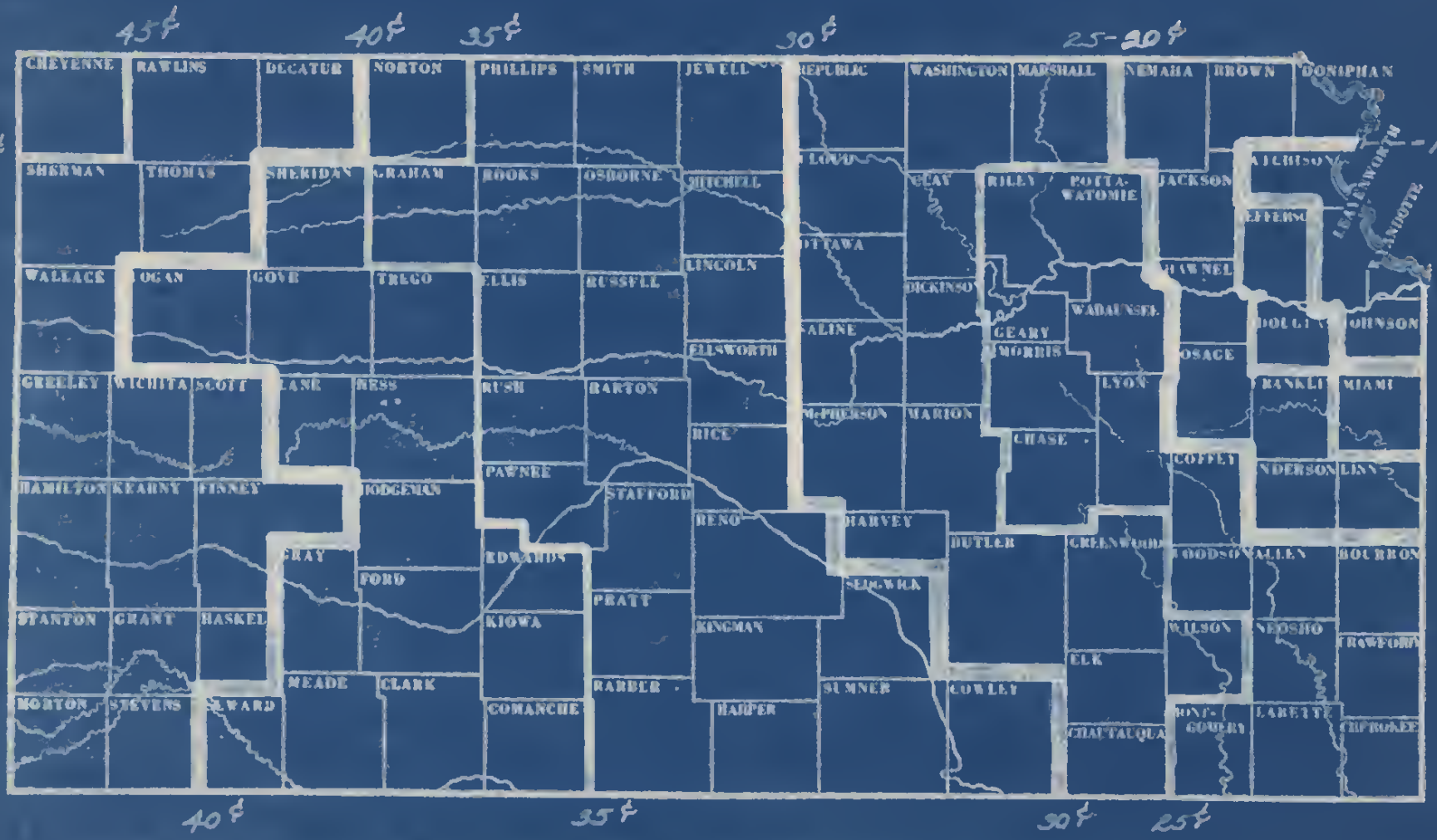

Fig. 11 Zones of actual hog freight rates from Kansas City, Kansas (Rates per cwt. as of April 1, 1940).

Figure 12 compares the hypothetical rate zone with the actual rate zone. Except for the southeastern section mentioned above, discrepancies tend to be scattered over the state. In Fig. 13, showing the differences between the two rates by counties, a bit more information is revealed. In addition to the southeast counties, a group in the northcentral part are found that did not show up in the zone comparisons. Two extreme counties, Atchison and Seward, have five-cent advantages. Jefferson County, adjoining Atchison on the south, also enjoys an advantage. It is interesting that such extreme discrimination should exist so close to Kansas City. It may be that this developed to meet competition from the St. Joseph market.

As previously mentioned, the double deck rate for sheep is the same as the cattle rate. Since sheep production is much less important than cattle and hog production in Kansas, and since quite a portion of the rail shipments of sheep is in double deck rather than single deck cars, a separate analysis for sheep has not been made.

Truck and Rail Transportation of Livestock

It was one of the original objectives of this study to make a comparison of truck and rail rates in Kansas. However, upon delving into the subject it was learned that several difficulties were involved which would make this investigation not feasible with the facilities available. The first of these is the fact that the railway and the truck do not perform exactly the same service. The second is that there is no secondary source where authentic and comprehensive listings of truck rates can be obtained.

In respect to the first of these difficulties, difference in service, a number of points should be mentioned. In the first place, the truck and the

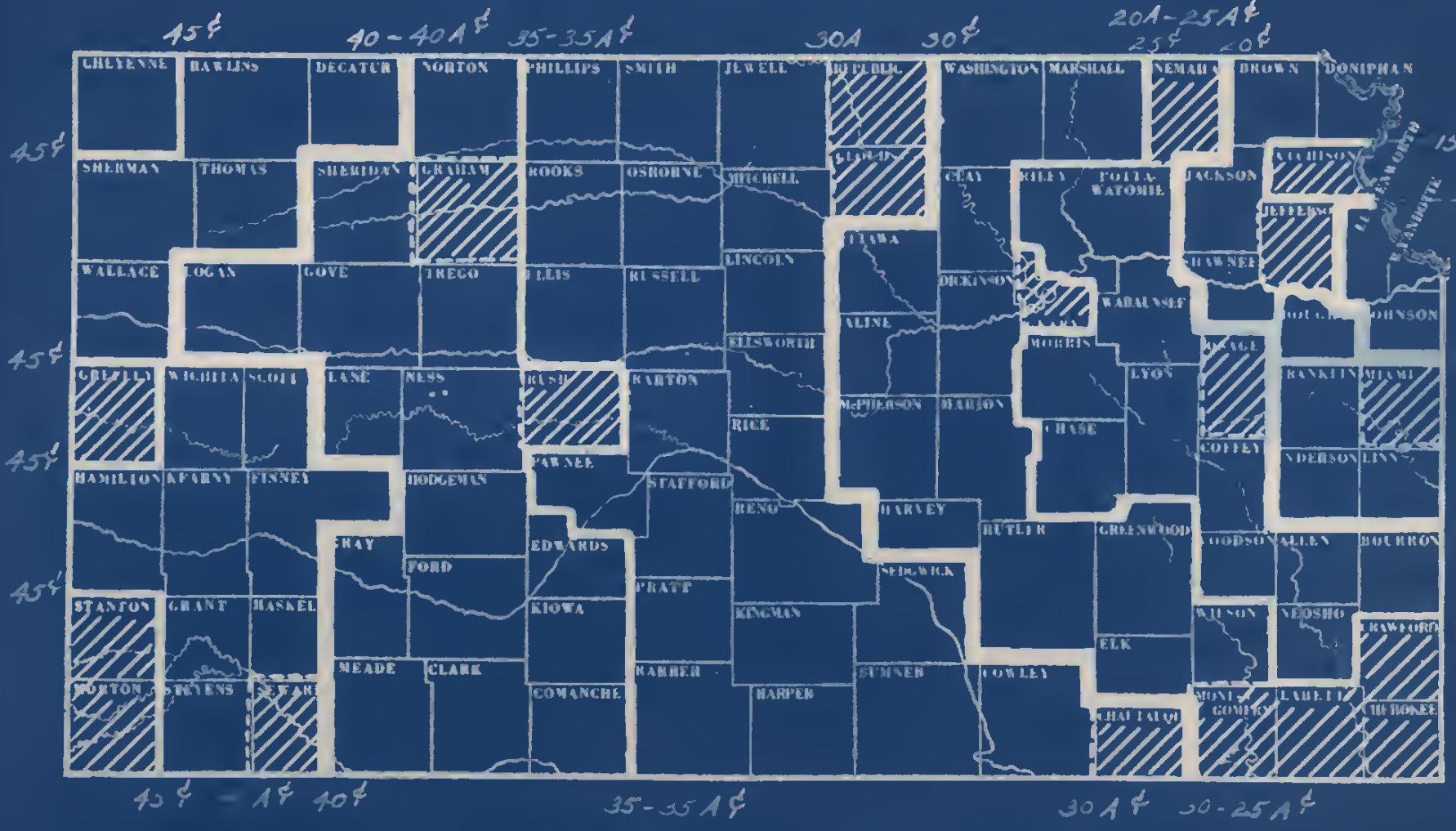

Fig. 12 Comparison of hypothetical distance rate zones with actual freight rate zones for [illegible] from Kansas City by rail. (The heavy lines represent hypothetical rate zone boundaries; the light, dotted lines surrounding the shaded areas represent the actual zone boundaries where those depart from the former.)

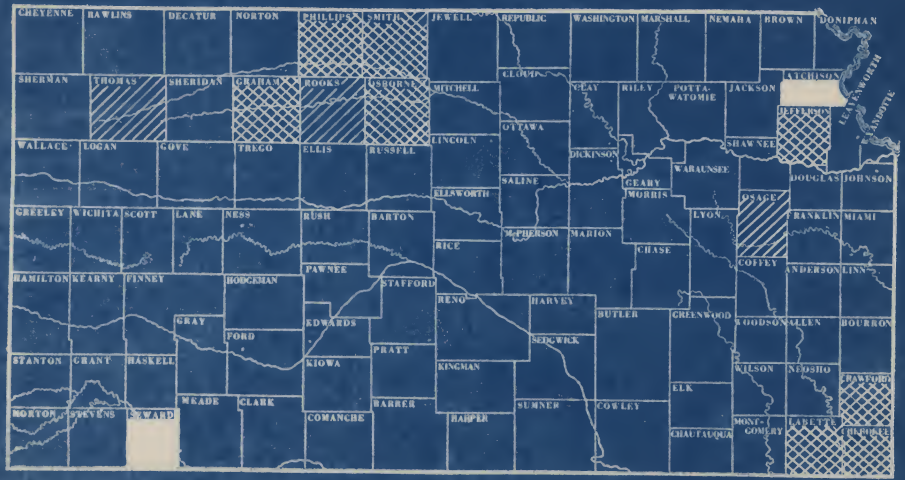

Fig. 13 Difference between actual and hypothetical rail freight rates for hogs from Kansas City.

(Rates per cwt. as of April 1, 1940. Actual rates lower in all cases.)

Legend

- 5¢ or more
- 4¢
- 3¢
- 2¢ or less

railroad do not travel identical routes in making the same haul. In most instances, this is irrelative, but the fact that the truck does make more direct contact is significant. The truck travels directly from the farm to the market, while the railroad hauls only from local concentration points. However, in some localities railroads have established pick-up service, (that is, picking up single animals or small lots and concentrating them at local railway points.) Another difference which is closely related to the one just mentioned is the fact that the truck will carry any number of animals, from one to a truck load, for an individual farmer, whereas the railway deals largely with carload lots. A third difference is in flexibility of time schedule. The truck can be made available at any hour of the day. The railway of necessity follows a rather rigid time schedule. A fourth difference, while debatable, might also be mentioned. This is in regard to time required in transit. The general consensus of opinion is that the truck is more rapid than the railway, especially for short hauls. This, however, is open to question. No information is available, and comparison would vary greatly with the circumstances and conditions involved.

Thus, if comparable rates were available there would still remain the matter of evaluating these differences which exist in service. They do definitely have material value to the farmer, but the matter of appraising them in objective terms would be a difficult task under any circumstances.

However, upon investigation it was found that the matter of making even the simple comparison of truck and rail rates in the state of Kansas is most difficult. The State Corporation Commission has made no specific tariffs applying to intrastate livestock hauling by truck. The Interstate Commerce Commission has set up a schedule applying to movement of stock to Kansas City, Missouri, from the state of Kansas. The executive offices of the Lockwood Motor Traffic Bureau Agency stated that probably only about 50 percent of the

trucked livestock coming into the Kansas City stockyards is legally interstate commerce. Thus, only half of the trucked livestock is subject to the quoted rates. When it is further considered that there is practically no policing to enforce these tariffs and that competition between truckers is keen, it can be justifiably realized that published truck tariffs would have practically no actual significance.

With this the case, the only means left to obtain reliably accurate truck rates was by comprehensive survey. This, however, was not possible with the facilities and time allotted to this study, so the matter was not carried out.

It is in light of these considerations that this particular objective of the study has not been carried through in the final presentation. The published rates might have been incorporated into this treatment for general interest, but because they have little significance, they have been omitted.

Cost of Shipping Live Animals Contrasted with Cost of Shipping Meat Products and the Effects upon the Location of Meat-packing Facilities

There are two primary and one minor objectives for making an analysis of this comparison of live and dressed meat rates. One is to determine where the most advantageous market for Kansas packers' products from a transportation standpoint is located. Another is to determine the most advantageous point for location of packing facilities in the state from a transportation standpoint. The third and minor objective, which is really a subdivision of the second, is to compare the transportation advantage of the interior packer with that of the terminal packer in Kansas.

The process involved in reaching these objectives was to obtain live and dressed meat rates from five Kansas points to six leading outside markets for

cattle and hogs. The dressed meat rates were adjusted by the normal dressing percent for each of the species so that they would be equivalent to the live animal weight.[7] Then the results were summarized as shown in the Tables 12, 13 and 14.

From Fig. 14, showing the summary in percentages, a number of points may be observed. The most impressive point of this chart is that the most advantageous rates for Kansas dressed meat are to Chicago and New York. The advantage is for shipment of live animals to the South and West, particularly to Los Angeles. In respect to location of Kansas packing plants, Kansas City has the advantage in both cattle and hogs. There is relatively little difference between the terminal and interior packer. Dodge City and Emporia, of course, definitely have dressed meat disadvantage. This consideration can be eliminated because the dressed meat rates from these points are zone rates for a class of commodities. The meat product rates from Wichita, Topeka, and Kansas City are specific rates granted to those points because of the volume of their shipments and, naturally, are lower than the zone rates.

Eliminating Emporia and Dodge City from consideration leaves Wichita, Topeka and Kansas City for comparison. Of these only Topeka is an interior packing point. Although Wichita possesses stockyard facilities, it is a relatively small market. Kansas City, of course, is one of the leading terminal markets in the country. In summary, the terminal markets rank first and third in advantage. The interior point, Topeka, is second. The difference between these is relatively small so apparently there is no great advantage for either type of packer. This is interesting in that the opinion is often expressed

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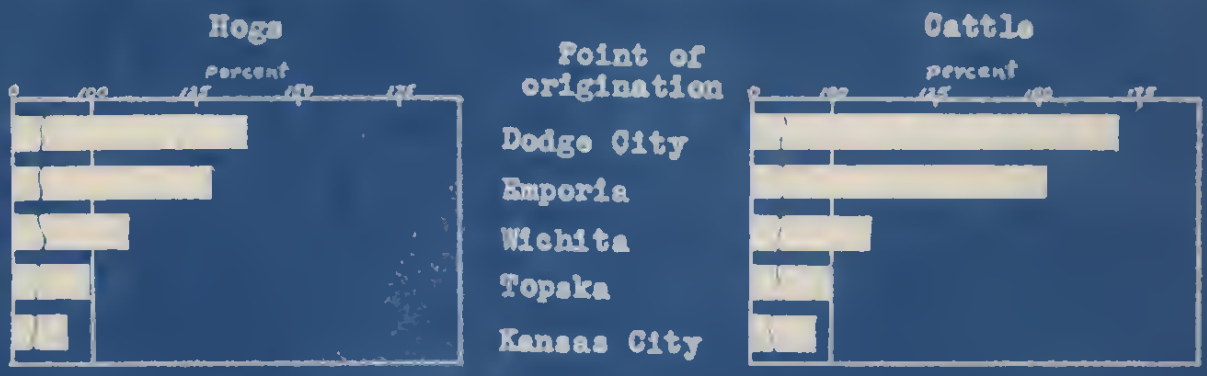
[7]No allowance is made here for shrinkage of either live or dressed meats. This fact, while not of too much significance in many cases, should be recognized when studying these results.

Average cost relationship from each of five Kansas points to seven markets.

(Dressed meat* cost expressed as a percentage of live rate)



Average cost relationship to each of the following seven markets from the above mentioned Kansas points.

Fig. 1A Summary of cost of shipping live animals vs. cost of dressed meat shipments to Kansas City and six leading outside markets. Rates as of May 15, 1940.

* Dressed meat costs of shipping both cattle and hogs are calculated on basis of normal dressing percent yield per hundred pounds of live weight.

Table 12. A comparison of the costs of rail transportation of meat products expressed as a percentage of the live animal rate per cwt. to seven markets when livestock is slaughtered (1) at point of origin, or (2) at an intermediate point, and the products are shipped to consuming centers.

Livestock originating at Wichita, Kansas	Percentage rates of meat products are of live animal rate per hundred pounds.[a] Destination of slaughtered animal													
	Kansas City		Chicago		New York City		New Orleans		Ft. Worth		Denver		Los Angeles	
	cattle	hogs	cattle	hogs	cattle	hogs	cattle	hogs	cattle	hogs	cattle	hogs	cattle	hogs
Slaughtered at Wichita, and products shipped to	114	104	85	91	102	109	116	107	129	130	101	108	187	177
Shipped alive to Emporia, slaughtered there and products shipped to	234	189	149	157	133	116	201	182	196	207				
Shipped alive to Topeka, slaughtered and products shipped to	152	132	108	118	115	124	151	151	209	217				
Shipped alive to Kansas City, slaughtered and products shipped to	100	100	104	116	98	100	150	149	212	214				
Livestock originating at Topeka, Kansas														
Slaughtered at Topeka, and products shipped to	103	82	68	73	96	102	110	106	125	126	97	104	182	166
Shipped alive to Kansas City, slaughtered and products shipped to	100	100	91	104	92	93	128	121	154	156				

[a] a. Cattle meat products rate based on 56 pounds of fresh meat and 14 lb. of packinghouse products.
b. Hog meat products rate based on 25 pounds of fresh meat, 35 lb. of packinghouse products, and 15 lb. of lard.

Table 13. A comparison of the costs of rail transportation of meat products to seven markets when livestock is slaughtered (1) at point of origin, or (2) at an intermediate point, and products shipped to consuming centers.[9]

Livestock originating at Dodge City, Kansas	Percentage of live animal rate per 100 pounds													
	Destination of slaughtered animal													
	Kansas City		Chicago		New York		New Orleans		Fort Worth		Denver		Los Angeles	
	Cattle	Hogs	Cattle	Hogs	Cattle	Hogs	Cattle	Hogs	Cattle	Hogs	Cattle	Hogs	Cattle	Hogs
Slaughtered at Dodge City and products shipped to	208.4	132.8	136.6	131.8	123.0	103.7	193.0	157.6	189.0	158.9	118.9	125.3	198.0	181.1
Shipped alive to Wichita, slaughtered there, and products shipped to	154.1	145.0	115.0	122.1	118.0	124.9	138.0	131.2	162.0	164.5				
Shipped alive to Emporia, slaughtered there, and products shipped to	203.4	177.8	149.1	159.8	134.0	120.4	197.0	182.2	190.0	203.4				
Shipped alive to Topeka, slaughtered there, and products shipped to	132.5	135.8	106.8	121.4	114.0	125.7	146.0	150.9	194.0	208.0				
Shipped alive to Kansas City, slaughtered there, and products shipped to	100.0	100.0	107.1	117.8	100.0	101.6	149.0	147.9	201.0	202.7				
Livestock originating at Kansas City, Kansas														
Slaughtered at Kansas City and products shipped to			67.0	71.0	83.0	80.0	108.0	101.0	128.0	121.0	121.0	120.0	169.0	155.0

[9]Calculated from freight rates obtained through courtesy of railroads serving these points.

Table 14. A comparison of the costs of rail transportation of meat products vs. cost of transportation of the live animal to five markets when livestock is slaughtered (1) at point of origin, or (2) at an intermediate point, and the products are shipped to consuming centers. Actual rates as of May 15, 1940.[9]

Cattle originating at Dodge City, Kansas	Actual railroad rates per 100 pounds live weight											
	Destination											
	Kansas City		Chicago		New York		New Orleans		Fort Worth			
	Live	Comb.[10]	Live	Comb.[10]	Live	Comb.[10]	Live	Comb.[10]	Live	Comb.[10]		
Slaughtered at Dodge City and products shipped to	32	66.3	56	76.5	102	125.2	68	131.4	44	83.3		
Shipped alive to Wichita, slaughtered there and products shipped to	32	49.3	56	64.4	102	119.9	68	94.1	44	71.1		
Shipped alive to Emporia, slaughtered there, and products shipped to	32	65.1	56	56.5	102	136.9	68	133.9	44	83.4		
Shipped alive to Topeka, slaughtered there, and products shipped to	32	42.8	56	59.8	102	116.4	68	99.4	44	85.4		
Shipped alive to Kansas City, slaughtered there, and products shipped to	32	32.0	56	60.0	102	102.4	68	101.2	44	88.4		

[9]Calculated from freight rates obtained through courtesy of railroads serving these points.

[10]Combination rate= live rate to point of slaughter and rate on 56 lbs. fresh meat and 14 lbs. packinghouse products from point of slaughter to destination.

Table 14. (Continued)

Cattle Originating at Wichita, Kansas										
Slaughtered at Wichita, and products shipped to	24	27.3	50	42.4	96	97.9	62	72.1	38	49.1
Shipped alive to Emporia, slaughtered there, and products shipped to	24	56.1	50	74.5	96	127.9	62	124.9	38	74.4
Shipped alive to Topeka, slaughtered there, and products shipped to	24	36.4	50	53.8	96	110.4	62	93.4	38	79.4
Shipped alive to Kansas City, slaughtered there and products shipped to	24	24.0	50	52.0	96	94.4	62	93.2	38	80.4
Cattle Originating at Emporia, Kansas										
Slaughtered at Emporia, and products shipped to	18	38.1	46	56.5	92	109.9	62	106.9	42	56.4
Shipped alive to Topeka, slaughtered there, and products shipped to	18	25.4	46	42.8	92	99.4	62	82.4	42	68.4
Shipped alive to Kansas City, slaughtered there, and products shipped to	18	18.0	46	46.0	92	88.4	62	87.2	42	74.4

Table 14. (Continued)

Cattle Originating at Topeka, Kansas										
Slaughtered at Topeka, and products shipped to	13	13.4	45	30.8	91	87.4	64	70.4	45	56.4
Shipped alive to Kansas City, slaughtered there, and products shipped to	13	13.0	45	41.0	91	83.4	64	82.2	45	69.4
Cattle Originating at Kansas City, Kansas										
Slaughtered at Kansas City, and products shipped to			42	28.0	85	70.4	64	69.2	44	56.4
Shipped alive to Topeka, slaughtered there, and products shipped to			42	43.8	85		64		44	

Table 14. (Continued)

Hogs originating at Dodge City, Kansas												
Slaughtered at Dodge City, and products shipped to	36	47.8	56	73.8	102	105.8	68	107.2	44	69.9		
Shipped alive to Wichita, slaughtered there, and products shipped to	36	52.2	56	68.4	102	127.4	68	89.2	44	72.4		
Shipped alive to Emporia, slaughtered there, and products shipped to	36	64.0	56	89.5	102	122.8	68	123.9	44	89.5		
Shipped alive to Topeka, slaughtered there, and products shipped to	36	48.9	56	68.0	102	128.2	68	102.6	44	91.5		
Shipped alive to Kansas City, slaughtered there, and products shipped to	36	36.0	56	66.0	102	103.6	68	100.6	44	89.2		
Hogs originating at Wichita, Kansas												
Slaughtered at Wichita, and products shipped to	28	29.2	50	45.4	96	104.4	62	66.2	38	49.4		
Shipped alive to Emporia, slaughtered there, and products shipped to	28	53.0	50	78.5	96	111.8	62	112.9	38	78.5		
Shipped alive to Topeka, slaughtered there, and products products shipped to	28	36.9	50	59.0	96	119.2	62	93.6	38	82.5		
Shipped alive to Kansas City, slaughtered there, and products shipped to	28	28.0	50	58.0	96	95.6	62	92.6	38	81.2		

Table 14. (Concluded)

Hogs originating at Emporia, Kansas												
Slaughtered at Emporia, and products shipped to	22	31.0	46	56.6	92	89.8	62	90.9	42	56.5		
Shipped alive to Topeka, slaughtered there, and products shipped to	22	25.9	46	45.0	92	105.2	62	79.6	42	68.5		
Shipped alive to Kansas City, slaughtered there, and products shipped to	22	22.0	46	52.0	92	89.6	62	86.6	42	75.2		
Hogs originating at Topeka, Kansas												
Slaughtered at Topeka, and products shipped to	17	13.9	45	33.0	91	93.2	64	67.6	45	5[illegible].5		
Shipped alive to Kansas City, slaughtered there, and products shipped to	17	17.0	45	47.0	91	84.6	64	81.6	45	70.2		
Hogs originating at Kansas City, Kansas												
Slaughtered at Kansas City, and products shipped to		17.0	42	30.0	85	67.6	64	64.6	44	53.2		
Shipped alive to Topeka, slaughtered there, and products shipped to			42		85		64		44			

that the rise in importance of interior packers has been due to transportation advantages.

Two tables have been presented which have given the specific transportation costs of the two alternative methods of shipping as the live animal and as carcass meat. Costs of shipping, where the animal was slaughtered at one intermediate point between the origin and destination, also were shown. Considered as a whole, there were quite a number of possible combinations and, naturally, the picture was complex and not entirely comprehensible from casual scrutiny. However, some study will bring to light certain specific relationships which were of interest and significance. Many points could be noted although only a few of the most important ones will be brought to attention. Shipments to New York were cheaper from Kansas City than from any other of the Kansas points used in this study. Shipments to Chicago were less costly from Topeka than from other Kansas points. Shipments of meat to the South, while more expensive than shipping live animals, were relatively less expensive to New Orleans than to Fort Worth. In the eastern part of Kansas, specifically Topeka and Kansas City, the disadvantage of meat shipment was almost insignificant.

However, in those instances in which the dressed meat rate is much below the live rate, usually it will be more economical to pack the animal as close to its point of origin as possible. A relationship of this kind might lead to a situation such as the following: A farmer near Topeka, or west of Topeka, has some hogs to sell. Both Kansas City and Topeka packers are in the market for his hogs. In considering the price which can be offered, buyers at each market will consider freight costs. Assuming that the possible markets for the products from these hogs are Kansas City, Chicago, New York, Fort Worth, and New Orleans, in every case, except when the slaughtered product is to be

shipped to New York, the Topeka packer could afford to out-bid the Kansas City packer on the basis of his lower freight costs alone. The advantage which he would have may be seen in Table 15.

A somewhat similar situation existed in the case of cattle. When purchasing cattle at Topeka, the Topeka packer could ship the beef and packinghouse products from these cattle to Chicago, Fort Worth, and New Orleans for the equivalent of more than ten cents per 100 pounds live weight less than could the Kansas City packer. From Kansas City, the freight costs on the live animal and the beef and packinghouse products from the live animal would be approximately equal. However, as with hogs, the Kansas City packer again had an advantage over the Topeka packer in freight costs to New York on beef and packinghouse products from cattle purchased near Topeka. The actual freight costs which each group of packers would have are seen in Table 16.

The South and Southwest provide an important outlet for the products from Kansas packinghouses. Although the importance of this area for Kansas meat products has decreased during recent years, it is still great enough that it should be given some consideration in this study.

Freight rates to the South were unfavorable to the movement of dressed meat and packinghouse products. This is shown in detail in Table 17, which presents a comparison of the costs of rail transportation of meat products expressed as a percentage of the live animal rate per hundred weight to five southern markets when the live animal is slaughtered at Kansas City, Topeka, and Wichita.

In general, rates to the Southeast were more favorable to the movement of dressed meat than were rates to the South, and the rates to the South tended to be more favorable than the rates to the Southwest. Thus was illustrated again the effect of the present freight rate structure, which shows

Table 15. A comparison of the freight costs of Kansas City and Topeka packers in laying down dressed pork and packinghouse products from hogs at each of five markets, when the live hog is purchased at Topeka, Kansas.[11]

Destination of pork and by-products of slaughtered hog.	Kansas City Packer			Topeka Packer			
	Freight cost on live animal in cents per cwt.	Freight on dressed meat and packing-house products to point of destination.[12]	Total cost of laying down meat at point of destination per cwt.[13]	Freight on live animal in cents per cwt.	Freight on dressed meat and packinghouse products to point of destination.[12]	Total cost of laying down meat at point of destination per cwt.[13]	Freight advantage held by Topeka packer in terms of cents per cwt. live weight.
Kansas City	17¢	0¢	17¢	0¢	13.9¢	13.9¢	+ 3.1¢
Chicago	17¢	30¢	47¢	0¢	33¢	33¢	+ 14.0¢
New York City	17¢	67.6¢	84.6¢	0¢	93.2¢	93.2¢	-8.6¢
Fort Worth	17¢	53.2¢	70.2¢	0¢	56.5¢	56.5¢	+ 13.7¢
New Orleans	17¢	64.6¢	81.6¢	0¢	67.6¢	67.6¢	+ 14.0¢

[11]Calculated from freight rates obtained through courtesy of railroads serving these points.

[12]Dressed meat rate is on the equivalent weight of the dressed meat and packinghouse products which would be obtained from 100 pounds of live weight.

[13]Total freight cost equals live rate plus dressed meat and packinghouse products rate.

Table 16. A comparison of the freight costs of Kansas and Topeka packers in laying down dressed beef and packinghouse products from cattle at each of five markets, when the live cattle are purchased at Topeka, Kansas.[14]

Distribution of beef and by-products of slaughtered cattle.	Kansas City Packer			Topeka Packer			
	Freight to Kansas City on live animal in cents per cwt.	Freight on dressed beef and packinghouse products to point of destination.[15]	Total freight cost to point of destination.[16]	Freight on live animal in cents per cwt.	Freight on dressed beef and packinghouse products to point of destination.[15]	Total freight cost to point of destination.[16]	Freight advantage held by Topeka packer in terms of cents per cwt. of live weight.
Kansas City	13¢	0¢	13¢	0¢	13.4¢	13.4¢	-0.4¢
Chicago	13¢	28¢	41¢	0¢	30.8¢	30.8¢	-10.8¢
New York City	13¢	70.4¢	83.4¢	0¢	87.4¢	87.4¢	-4.0¢
Fort Worth	13¢	56.4¢	69.4¢	0¢	56.4¢	56.4¢	-13.0¢
New Orleans	13¢	69.2¢	82.2¢	0¢	70.4¢	70.4¢	-11.8¢

[14]Calculated from freight rates obtained through courtesy of railroads serving these points.

[15]Dressed beef and packinghouse products rate is calculated on the equivalent weight of the dressed meat and packinghouse products which would be obtained from 100 pounds of the live animal.

[16]Total freight cost equals live rate plus dressed meat and packinghouse products rate.

Table 17. A comparison of the costs of rail transportation of meat-products expressed as a percentage of the live animal rate per cwt. to five southern markets when the live animal is slaughtered at Kansas City, Topeka, and Wichita.

Destination of meat and by-products of slaughtered animal.	Kansas City: Freight on live animal in cents per cwt.		Kansas City: Freight on dressed meat and packinghouse products to point of destination.[17]		Kansas City: Dressed meat rate as a percent of the live animal rate.	
	hogs	cattle	hogs	cattle	hogs	cattle
Phoenix	86	86	$1.55	$1.47	180	171
Albuquerque	60	60	.79	.79	132	132
Fort Worth	44	44	.53	.56	121	128
New Orleans	64	64	.65	.69	101	108
Memphis	47	47	.52	.54	111	115
			(Topeka)			
Phoenix	83	83	$1.54	$1.57	186	189
Albuquerque	57	57	.77	.78	135	137
Fort Worth	45	45	.57	.56	126	125
New Orleans	64	64	.68	.70	106	110
Memphis	48	48	.52	.54	108	113
			(Wichita)			
Phoenix	78	78	$1.43	$1.44	183	185
Albuquerque	51	51	.73	.74	143	145
Fort Worth	38	38	.49	.49	129	129
New Orleans	62	62	.66	.72	107	116
Memphis	49	49	.52	.54	106	110

[17]a. Cattle meat products rate based on 56 pounds of fresh meat and 14 pounds of packing house products.

b. Hog meat products rate based on 25 pounds of fresh meat, 35 pounds of packinghouse products and 15 pounds of lard.

a tendency to increase the advantage of live shipments over the dressed product to the West.

One freight rate discrepancy of particular interest to Kansas meat packers was found in the live animal-dressed meat rate relationship to the Pacific Coast. The dressed meat rate was approximately two and a half times as great as the rate on the live animal. The freight rate on fresh meat from three Kansas points or from Kansas City, Missouri to either Los Angeles or San Francisco was $2.60 per hundred weight, as compared with the live animal rate shown in Table 18. This rate relationship was significant in that it permitted the shipment of livestock from Kansas to California to be slaughtered on the Pacific Coast.

Table 18. Carload freight rates per 100 pounds for cattle, calves, hogs, and sheep shipped by rail from Kansas City, Missouri and Wichita, Topeka, and Salina, Kansas to Los Angeles or to San Francisco, California, April 17, 1941.[18]

From	To Los Angeles	To San Francisco
Kansas City, Missouri	103 cents	107 cents
Wichita, Kansas	93 cents	104 cents
Topeka, Kansas	96 cents	107 cents
Salina, Kansas	93 cents	104 cents

[18]Rates courtesy of Union Pacific Railroad.

As an indication of the importance of this movement, Kansas shipped 33,500 hogs into California in 1939, while in the same year the receipts of hogs from Kansas at Kansas City totaled 196,000 head. This movement has been increasing in recent years, being only 4,000 in 1936 and 8,800 in 1938.

Apparently, hogs constituted the greatest share of this westward movement of livestock.

A change in the freight rate relationship to the West in favor of fresh meats over the live animal might open up a market of considerable importance to the Kansas packer.

SUMMARY AND CONCLUSIONS

1. The meat-packing industry was one of the most important industries in the United States and was the most important manufacturing industry in Kansas. The welfare of this industry in Kansas was associated closely with the welfare of farmers, consumers, laborers, and other industries of the state.

2. In recent years the meat-packing industry has suffered severe set-backs in Kansas. The industry has gained in importance in the Northwestern Corn Belt, the Pacific Coast States, and in the South at the expense of the New England States, the Eastern Corn Belt, and the Southwestern Corn Belt, of which Kansas is a part.

3. The transportation problem was complex and difficult to analyze. Some discrepancies appeared in the freight rate structure in regard to the shipment of live animals from different points in Kansas to Kansas City. In no case, however, did these discrepancies exceed six cents per hundred pounds. The significance of this should not be over-emphasized. This margin represented less than one percent of the average value of live animals over the last ten years. Consequently, only in extremely long-run considerations would these rate discrepancies be of practical importance. However, this does not mean that differences in transportation costs due to distance are not important.

4. No attempt was made to compare the cost of truck and rail transportation. The differences in services performed by these two modes of transportation would have made such a comparison difficult. The truck picks up livestock at the farm and carries it to the market while the railroad transports the stock only from the local shipping point to market.

5. The location of the meat-packing industry was dependent upon many factors. Transportation facilities and transportation costs were important factors affecting the location. If the cost of shipping livestock from the point of production to the point of consumption should be less than the cost of shipping the dressed meat, it would be logical to expect packing plants to be located near the point of consumption. If the cost of shipping dressed meat should be less than the cost of shipping the live animal the packing plant probably would be located near the point of production. This study showed that it was cheaper to ship dressed meat to the east and north of Kansas than to ship livestock. On the other hand, it was cheaper to ship livestock to the South and West than to ship dressed meat. Thus, in the case of shipments to the West Coast and to the South, the freight rate structure tended to favor the shipment of livestock out of the trade territory of Kansas packers.

6. From this study there appeared to be no great rate advantage favoring interior packers as has been suggested by some authorities in the field of livestock marketing.

7. Two facts should be kept in mind in regard to this study. (1) Out of each dollar spent by the consumer for meat, only four cents went for transportation. (2) In some cases the conclusions reached will be significant; this will be particularly true in the long run. But also it should be remembered that other factors enter into the picture and the conclusions indicated

should apply only when they are balanced with the other influences involved in the particular situation.

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